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COMMERCIAL FISHERIES REVIEW

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United States Department of the Interior
Washington, D.C.

UNITED STATES
DEPARTMENT OF THE INTERIOR
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FISH AND WILDLIFE SERVICE
ALBERT M. DAY, Director

COMMERCIAL FISHERIES REVIEW

A REVIEW OF DEVELOPMENTS AND NEWS OF THE FISHERY INDUSTRIES
PREPARED IN THE DIVISION OF COMMERCIAL FISHERIES

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Applications for COMMERCIAL FISHERIES REVIEW, which is mailed free to members of the fishery industry and allied interests, should be addressed to the Director, Fish and Wildlife Service, United States Department of the Interior, Washington, 25, D.C.

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COMMERCIAL FISHERIES REVIEW

November 1946 Washington 25, D. C. Vol. 8, No. 11

PANAMA AND ITS FISHERIES

By C. R. Lucas*

The Republic of Panama constitutes the major part of the Isthmus of Panama, which joins North and South America. About 34,000 square miles, bordering on both the Caribbean Sea and the Pacific Ocean, is included in the republic. The Panama Canal Zone, only 10 miles wide, divides Panama near its center.

Exploration followed the discovery of the Isthmus in 1501; Spanish governors were appointed, and the city of Panama was built. This city became the center of the Spanish new world as commerce in gold and other items of trade flowed across the Isthmus on their way to and from the mother country. When Panama City was sacked and burned by Henry Morgan, the pirate, in 1671, it was rebuilt on its present site.

In the 18th century, Panama's importance waned, only to rise again at the turn of the 19th century when the United States constructed the Panama Canal.

Although the influence of the Canal Zone has raised Panama's living standards above those of most other Latin American countries, the outlying portions have suffered neglect. Peons live on a subsistence basis in impoverished circumstances, and the Indians have retained their primitive state.

Highways and railroads are limited and leave much of the country inaccessible to land travel. Small boats are used widely along both coasts. The Pan-American highway is aiding the movement of commerce in agricultural products from districts near the Canal Zone.

Panama is relatively mountainous, with two mountain ranges within its borders. On the Caribbean side, the coast extends about 480 miles, while the Pacific shoreline extends about 770 miles. In some sections there are sandy surf-swept beaches, while in other areas the shore is faced with high cliffs. Coral reefs are common throughout the entire length of the coast.

The fishes of Panama include over 300 recorded species on the Pacific Coast and about 250 species on the Caribbean side. The fishes of the tremendously productive Pacific waters generally reach a larger average size than those from the Caribbean. Important market fishes include corbina, red snapper, Spanish mackerel, groupers, jacks, snook, and mullet. Sailfish and marlins, prized by game fishermen, and tuna are abundant on the Pacific side.

*Assistant Chief, Market News Section, and member of Caribbean Fishery Mission (1942-43).

Despite abundant resources, the fishery industries of Panama are not of much importance. During the years prior to 1936, with the assistance of Japanese hand-line fishermen, the catch was built up to about 4 million pounds, but since 1936, when these men were prohibited from further operations, the catch has approximated 2 million pounds a year.

Commercial fishing is concentrated in the Gulf of Panama in and around the islands adjacent to the Canal entrance. In 1942, 214 boats, employing 529 fishermen, were reported by government sources. Motor boats numbered 29, including transport vessels, while there were 150 sailboats, and 35 dugouts operated without sail. Fish are landed fresh directly at the docks in Panama City. A limited supply of ice and restricted storage space place limitations on the production.

Fish are taken with cast nets, handlines, haul seines up to 300 feet in length, and fish pots. The Indians have, for years, operated weirs in the river estuaries and employed spears and bows and arrows in sheltered waters.

Before the war the republic imported about 2½ million pounds of canned and dried fish annually. Panama's population of 631,000 consumed, at that time, fish products equivalent to 15 pounds of fresh fish per capita annually. While this is the highest average in Central America, it is much less than that of most other areas having a similar abundance of nearby food fish supplies.

The production and consumption of fresh fish, shrimp, and spiny lobsters could, undoubtedly, be increased. The nearness to the fishing grounds and good harbor facilities also make the establishment of a Panama-based tuna fishery logical from every standpoint. Tuna clippers from California already use Panamanian waters for collecting bait preparatory to fishing in offshore waters. Tuna could be canned in the area or frozen and transported to other points for canning.

Further opportunities for expansion of fishery activities lie in the use of game fish resources. The Pacific Sailfish Club of Balboa, which was formed in 1932, has enjoyed great success in this field. Active members numbering about 200 were reported to have taken 469 sailfish in 1938, the most successful season for this type of fishing. These members, with other fishermen, enjoy excellent fishing for snappers, corbina, tarpon, and many other species.

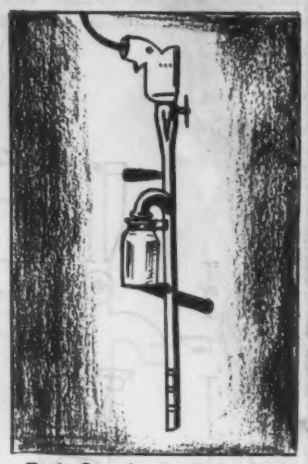
Fishing in Panama and the Canal Zone area is complicated to some extent by jurisdictional problems due to the operation of Canal authorities, the U. S. Army, the U. S. Navy, and the Panama Government. Commercial fishing is restricted generally to citizens of the republic.

Large vessels of other nations fishing for bait in Panamanian waters, unless special contracts have been entered into with the government, must be in possession of annual permits issued by the Ministry of Agriculture, Commerce, and Industry. This fishing permit carries a tax of from $150 to $500 per year payable in advance and violators are subject to fines of from $500 to $2,000. Under Decree No. 408 of April 27, 1946, which imposes the regulations on operations of foreign vessels, all fish not required for bait must be returned alive to the sea.

A SAMPLER FOR LIVERS FROZEN IN DRUMS

By Lynn G. McKee* and F. Bruce Sanford*

Under conditions prevailing in the fish liver industry, the cold-storage facilities and the time required to freeze drums of livers "hard" are not always available. It is often desirable to sample livers for vitamin assay while they remain in the drums. The sampler described in this article will be found useful because it functions well in soft-frozen material.



Early Sampler for Fish Livers

The sampler (Figure 1, p. 4) is similar in principle to the one described earlier for use in unfrozen livers.1/ However, a number of minor changes have been made in design. One is the lengthening of the barrel of the sampler.

To obtain an auger spiral long enough for the lengthened barrel, it is necessary to weld two ship augers together. (The augers used by the writers were 1-3/16 inches in diameter and had no leader-screw. The spiral on each auger was 24 inches in length.) When the augers are welded together, they must be perfectly aligned, otherwise undesirable vibration will be encountered when the sampling device is used.

The drum sampler does not operate effectively unless the material to be sampled is at least partially frozen. The livers should be frozen sufficiently so that they are not pushed aside by the passage of the auger into the drum. To facilitate the use of the auger in frozen material, the tip of the auger has been left equal in size to the outside diameter of the tube. No machining is necessary to accomplish this, because the auger furnished by the manufacturer has a tip slightly larger than the spiral portion and equal to the tube's outside diameter. The four handles welded to the tube will be found helpful in removing the sampler from the frozen livers.

A ½-inch drill motor is required to turn the auger. If the sampler is used with livers of low oil content, the motor should be of heavy-duty type.

A No. 10 can is used to receive the sample as it falls from the opening of the discharge tube. This container has a satisfactory capacity (1 gallon), yet it does not interfere greatly with the sampling operation. When the container is replaced, its bottom should rest on the lugs of the lower container bracket. The top should then be pushed back against the latch which snaps over the edge of the container to hold it secure.

When using the sampler, the operator will find it convenient to stand on top of the drums. A satisfactory footing can be obtained by using pieces of wood 2 by 6 inches, 3 inches longer than the diameter of the drum. These small pieces can be shifted as needed.

* Chemists, Fishery Technological Laboratory, Seattle, Washington.

1/ "Drill Sampling Device for Fish Livers," by L. G. McKee, F. B. Sanford, and G. C. Bucher, published in Fishery Market News, November 1944, pp. 6-11 (formerly Sep. No. 84). Also published as Fishery Leaflet No. 141.

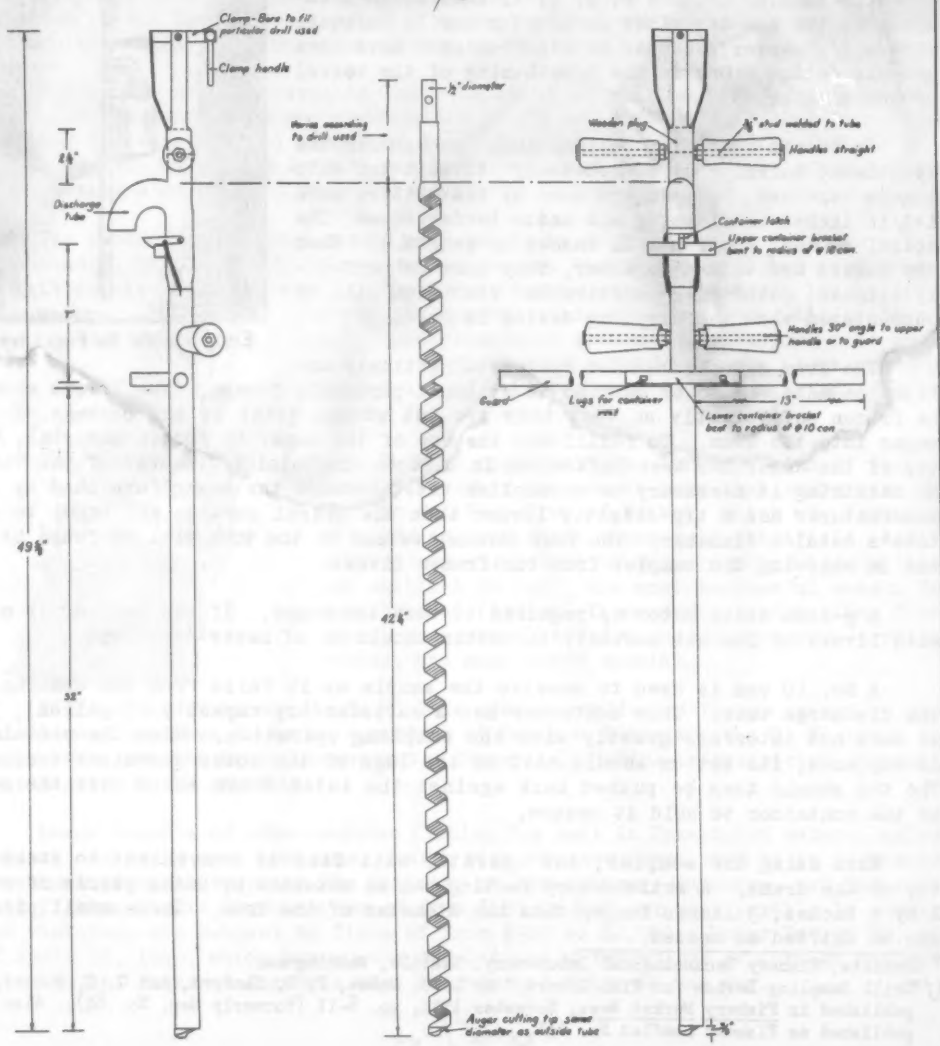
SAMPLING DEVICE FOR FROZEN LIVERS IN DRUMS

Department of Interior
Fish and Wildlife Service
Technological Laboratory

Seattle, Washington
May 19, 1945.

3" 0" 3" 6"

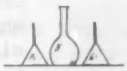
Drawn by: Marvel Caudill

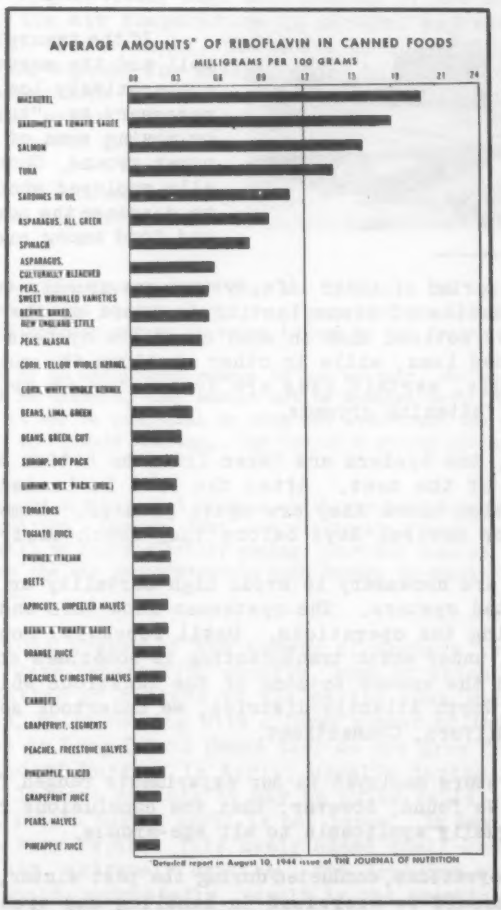


The number of cores to be taken depends upon the kinds of livers to be sampled. It should be kept in mind that the larger the number of cores taken the more representative the sample.

Although the sampler was designed for use in livers frozen in drums, it can also be used in livers frozen in 5-gallon cans. However, if a large number of the smaller containers are to be sampled, a separate sampler should be constructed for this purpose. To adapt the drum sampler for 5-gallon cans, the only alterations needed are the shortening of the guard and that portion of the barrel of the sampler which is inserted into the cans. The recommended dimensions are shown in previously published drawings of the sampler for fresh livers.1/

1/Ibid.





--Can Manufacturers Institute, Inc.

OYSTER TRANSPLANTING IN WINTER AND EARLY SPRING

By Victor Loosanoff *

In cultivating oysters it is often necessary to transplant them from one bed to another. In New England and New York waters, where cultivation has attained a very high level, oysters may be transplanted several times before they are ready to be marketed.

A new generation of oysters, which is commonly called "set," appears in the summertime on shells planted in comparatively shallow water near the shore. To protect the set from winter storms, which often cover the setting beds with a heavy layer of sand or mud, the young oysters are transplanted to deeper water, or to areas protected from strong wave action.

Fishery Biological Laboratory, Milford, Conn.

If the transplanted oysters grow well and the mortality among them is comparatively low, it may be again necessary to "thin" the oyster bed by moving some of its population to other ground. Such a measure is usually employed when it is desirable to decrease the competition for space and food among crowded oysters.

During the later period of their life, oysters are usually transplanted again. In those cases the practice of transplanting is based on the experience of the oyster growers who have noticed that in some areas the oysters grew very rapidly and their meats remained lean, while in other sections the mollusks quickly became "fat." As a result, certain beds are designated as growing areas, while others are considered fattening grounds.

In transplanting, the oysters are taken from the bottom with large dredges and piled on the deck of the boat. After the boat is loaded, the oysters are shipped to a new location where they are again planted. Sometimes the oysters may be out of water for several days before they reach their new destination.

Many precautions are necessary to avoid high mortality or serious shell injury to the transplanted oysters. The oystermen know this and usually exercise considerable care during the operations. Until recently, however, the effects of certain conditions, under which transplanting is sometimes conducted, remained undetermined. To find the answer to some of the questions which interested the oyster growers of the North Atlantic district, we undertook several experiments at our laboratory at Milford, Connecticut.

The age of the oysters employed in our experiments ranged from approximately 6 months to 5 years. We found, however, that the conclusions reached at the end of our studies were equally applicable to all age-groups.

One series of observations, conducted during the past winter, has demonstrated that extreme caution should be exercised in handling and transplanting oysters

*Aquatic Biologist, Milford Biological Laboratory, Division of Fishery Biology.

when the air temperature is below freezing. Failure to employ certain precautions may result in a mass mortality of the mollusks.

The results of the experiments may be briefly summarized as follows: The majority of oysters, if frozen but left undisturbed until they thaw out, will survive. However, if frozen oysters are shaken, shovelled, or subjected to any other type of rough handling, heavy mortality will occur among them. In some of our experiments, 100 percent of the oysters which were first frozen and then shaken in bushel baskets, died, while almost all the oysters in the other baskets which were frozen but not shaken, lived after thawing and were still in an apparently healthy condition 10 weeks after the end of the experiment. The mortality among the shaken oysters was probably due to the damage caused by the rearrangement of ice crystals within the body cells of the mollusks.

The shells of the frozen oysters were extremely brittle. Therefore, even if a few frozen oysters may survive the effects of handling, their shells may be so seriously damaged that it would later result in the death of the mollusks.

Because of the comparatively high salt content of the blood of oysters, they do not freeze until the air temperature is several degrees below the freezing point of fresh water. For example, the meats of the Long Island Sound oysters remained unfrozen when exposed for several hours to a temperature of 28° F. However, below this temperature oysters may freeze quickly, especially if they come from relatively fresh water. Naturally, because of the difference in volume, a small oyster will freeze quicker than a large one.

On the basis of our observations, we offer the following suggestions to the oyster growers of New England and New York who transplant oysters in the wintertime:

1. Do not let oysters freeze while they are on deck. The vibrations caused by the boat engine or the shocks experienced at the docking of the boat may be sufficiently strong to cause injury to the frozen oysters.

2. If, because of an unforeseen change in the weather, the oysters freeze on deck while in transit, they should not be handled until they thaw out. Sometimes it may be practical to pump sea water over the pile of frozen oysters to accelerate thawing. The use of a strong stream of water should be avoided.

3. Planters should not buy seed oysters which may have been handled in a frozen condition. Oysters that were previously frozen and killed by handling will be found slightly gaping, provided that at the time of examination the air temperature is high enough to permit the oysters to thaw out.

Studies of various phases of the growth of oysters, which we conducted at Milford Laboratory, gave interesting results, some of which may guide us in confining the transplanting of oysters to the period when such an operation would be most advantageous. While working with a large number of individually-marked oysters, we found that in Long Island Sound they do not grow from the onset of cold weather until the end of March. In April, usually during its latter part, the growth is resumed. In some oysters it may be quite rapid, but, in general, the average increase in length during April is not large. In May, however, the growth of oyster shells is very rapid. This newly added shell-growth is comparatively soft but, nevertheless, extremely brittle. The dredging or handling of oysters during that period would, undoubtedly, result in the breaking off of all or large portions of the new shell. Obviously, this would be definitely undesirable.

The results of our observations suggest, therefore, that if the oysters must be moved in the spring, the oyster growers should attempt to transplant as many as possible during the last two weeks of March and the first two weeks of April. The advantages of transplanting during this period are as follows:

1. Damage to the oyster shells, which at that time of the year have hard edges, will be much smaller than if the transplanting is done later in the season when new brittle growth is already formed.

2. Damage caused to the shells during transplanting should be repaired, in most instances, during the following period of rapid shell-growth.

3. The comparatively high air temperature of late March and early April will usually prevent freezing of the oysters while in transit.

We believe that the members of the oyster industry will gain if they follow the simple suggestions which we offer in this article. The mortality among the transplanted oysters will be substantially reduced, and the annual increase in the size of the oysters transplanted before the period of their active growth will be greater than if they are transplanted when the new shell-growth is soft and easily broken off.

FISH HAVE A HIGH NUTRITIVE VALUE

Fish are an excellent source of most of the minerals which the body needs to develop properly and perform its functions. Calcium and phosphorus (without which proper development of bones and teeth is impossible) occur in fish fillets in about the same quantities as in beef round. Marine fishes are especially rich sources of iodine, containing 50 to 200 times as much of this essential element as any other food. Oysters, shrimp, and crabmeat, compared with milk, provide half as much calcium, five times as much magnesium, and slightly more phosphorus. Iron and copper, which built up the hemoglobin content of the blood and prevent or remedy nutritional anemia, are easily obtained by eating most fish. Oysters and shrimp are the best known sources of these two minerals.

--Conservation Bulletin No. 34

EXTENSION OF UNEMPLOYMENT INSURANCE TO CERTAIN FISHING SERVICES

By Richard A. Kahn *

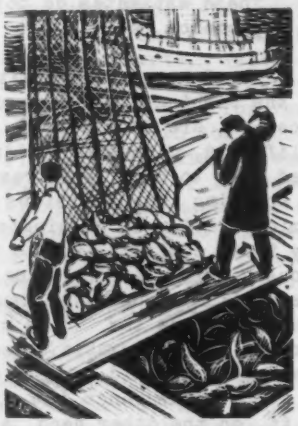
The new Unemployment Insurance Law (Public Law 719, 79th Congress, approved by the President on August 10, 1946) is a result of a well-established policy of the United States Congress to extend unemployment insurance to as many services as possible. For the first time in the history of the United States, Federal unemployment insurance has become obligatory in certain fishing services, although many such services on small vessels and in small enterprises are still excluded. Previous to August 10, fishing services, if performed by an officer or member of a crew of a vessel on the navigable waters of the United States, were excluded. This provision excluded practically all fishing services.

The newly included services are:

1. Services performed in connection with the catching or taking of salmon or halibut for commercial purposes;

2. Services performed on or in connection with a vessel of more than 10 net tons (determined in the manner provided for determining the register tonnage of merchant vessels under the laws of the United States).

All other fishing services are still exempt from Federal unemployment insurance; notably, all services exclusive of 1 and 2 above performed "by an individual in (or as an officer or member of the crew of a vessel while it is engaged in) the catching, taking, harvesting, cultivating or farming of any kind of fish, shellfish, crustacea, sponges, seaweeds, or other aquatic forms of animal and vegetable life." It may be noted that under the quoted provision, oyster farming on unnavigable waters is exempt. Under previous law these services were included.



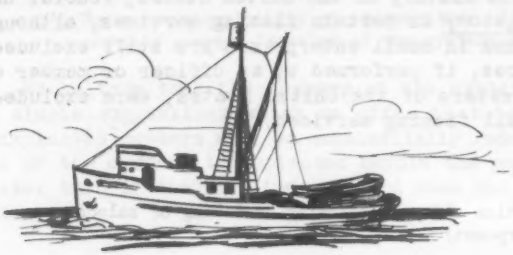
The reasons for previously excluding fishing services were the seasonal character of the fishery industries, as well as the questionable nature of fishery employment, and the difficulties of administering a law covering services performed mostly on the waters, where inspection by the tax collector is difficult.

The Federal Unemployment Insurance Tax applies to all firms having eight or more employees who are employed at least 1 full day in each of 20 or more different calendar weeks during the year. The rate is 3 percent on each employee's wages--up to $3,000 per year--paid for services performed after June 30, 1946. However, in some States, a lower so-called "experience rating" is permitted. Experience rating is the determination of the insurance rate for individual employers on the basis of a favorable experience with unemployment. After a minimum probational period of 3 years has been passed, experience in the individual employer's establishment or in other establishments of similar character may be used to establish experience ratings in a new enterprise, or in a newly added industry, such as, in this case, the fishing industry.

* Chief, Economics and Cooperative Marketing Section, Division of Commercial Fisheries.

It is estimated that approximately 35,000 members of the fishery industries are affected by the new law. The provisions of the new law cover employment on all vessels of the salmon and halibut fleets, where the employer has eight or more employees. The salmon and halibut fleets employ about 6,200 persons in the continental United States and 8,500 in Alaska--a total of 14,700. Of this number, approximately 4,500 persons work for employers having eight employees or more, while the others work in smaller fishery enterprises.

Inclusion of vessels of more than 10 net tons affects the larger vessels along both coasts and on the Great Lakes, particularly the New England groundfish fleet and the California purse seiners. According to recent statistics, vessels over 10 net tons included 2,789 motor vessels, 72 sail boats, and 55 steam vessels. Consequently, at least 2,916 vessels are involved, having an aggregate crew of about 30,000 members.



As mentioned above, the Federal tax due for services performed after June 30, 1946, is 3 percent of wages up to $3,000 per year. Since nearly all fishermen in question receive income exceeding this figure, the burden placed on the industry will be about $2,700,000 per year, equalling about 1 percent of the total sales value of the industry, or 1½ percent of the value of the catch of the respective vessels.

These estimates do not make allowance for reductions of the tax rate based on experience ratings.

The States which permit experience ratings and which had laws covering services in the fishing industries prior to enactment of the new Federal Unemployment Insurance Law, are Connecticut, New York, New Jersey, Pennsylvania, Louisiana, Texas, California, Minnesota, Illinois, and Ohio. To comply with the new law, these States need only to have their respective unemployment compensation laws and the systems of applying the provisions to fishing services approved by the Social Security Administration in Washington, D. C. Employers in these States will continue to pay their contributions to the State unemployment insurance fund as they did previously, with the following modification: The State insurance law cannot decrease the minimum amount which must be paid into the United States Treasury as unemployment insurance tax. This minimum amount is 10 percent of the regular tax, or 0.3 percent of the taxable wages, regardless of the actual tax required by State law. The employer would have to pay 0.3 percent to the Federal Treasury; for example, if a State insurance law fixes the unemployment insurance tax at 3.1 percent, or if, on the other hand, a State, on the basis of an experience rating approved by the Social Security Administration, has established an unemployment tax of, for example, only 1.7 percent. In the latter case, if the experience rating were not approved by the Social Security Administration, the employer would have to pay the full 3 percent tax established by Federal law; namely, 1.7 percent to State funds and 1.3 percent going to the U. S. Treasury.

Some State laws contain clauses which provide that when Federal unemployment insurance is extended to cover new types of services, the provisions of the State unemployment insurance law become extended automatically. These States are Massachusetts, North Carolina, Florida, Alabama, Washington, Indiana, Michigan, and

Wisconsin. The Territory of Hawaii also provides for this automatic extension. In Delaware, according to information received from the Social Security Administration, the legal situation has not yet been clarified. Delaware law provides that the State Unemployment Compensation Commission shall be "directed" to enter into agreements with the proper agencies in those cases where additional services may be brought under the Federal unemployment compensation system. However, due to an adverse interpretation of the State law by the Commission, such an agreement has not yet been made with the U. S. Social Security Administration.

In other States, volunteer election of excluded services was and is possible. Even prior to August 10, 1946, members of the fishery industries in these States could ask to be included in the State unemployment insurance system. The States which permit volunteer election are Maine, New Hampshire, Rhode Island, Maryland, Virginia, South Carolina, Mississippi, and Oregon. Alaska, too, makes volunteer election possible. In Georgia, the Commissioner of the State Unemployment Insurance Fund may void exclusion by "rule and regulation." That means that in Georgia also, with the approval of the Commissioner, members of the fishery industries may apply for admission under the existing law. In the States just mentioned, no new legislation is necessary to bring the fishery industries under unemployment insurance. The only requirement is that the respective employers write to the State Board or to the Administrator of the State Unemployment Insurance Fund and request volunteer participation in the insurance system. The enactment of the new law makes such requests advisable for the following reason: If an employer does not request participation, he still must pay 3 percent unemployment insurance tax, but his employees receive no benefits from the insurance law. Consequently, it is in the interest of the industry that employers make application as soon as possible.

California and New York, as well as Louisiana, have had some experience with State unemployment insurance on fishery industries. Most of the difficulties which arose in these States have been administrative, according to reports. Vessels were either temporarily hired by employers in other States or were temporarily fishing in inland waters of other States or, for an entire season, fished in foreign waters. Complaints on behalf of the industry were mostly concerned with the fluctuation of personnel; with the frequent variations in pay, often depending on the duration of a voyage; and with the fact that, in many cases, the master of the vessel was not directly bound by the directions of the employer. If the master of a vessel himself decides when and where to go, there is some question as to whether he and his crew are under "employment." The characteristic of employment is always that the employer directs the work of his employees. In many cases of employment on fishery vessels this direction appears to be only slight or negligible.

There are numerous other difficulties in the administration of unemployment insurance. In some cases, union agreements provide for stand-by pay where a vessel is under repair or is delayed through accident or for other reasons. Is this stand-by pay compensation for work? Until now, the question has not been satisfactorily answered. Another provision in some union agreements requires that a certain percentage of the catch must be paid to a union employment insurance and welfare fund. Is this contribution now superseded by the Federal tax? The greatest complications, however, arise from the fact that courts in some cases have considered the relationship in the fishery industries as a sort of partnership or joint adventurer relationship.

Certainly, if the new law is to provide the beneficial effects intended by Congress, those who are called upon to administer it will require a high degree

of understanding with regard to fishing and the fishery industries, and a high degree of good-will from the fishery industry.

NOTICE OF CORRECTION

On page 4 of the September 1946 issue of Commercial Fisheries Review, in the article "Feeding Fish Meals to Pullets," by Hugo W. Nilson and Richard W. Schayer, paragraph 2 should be deleted and the following paragraph substituted for it:

> The number of birds in this experiment is very small, but the results consistently showed that when 25 percent of the various fish meals was added to the ration no fishy or off flavors were evident in either the eggs or flesh. This means that the usual farm or commercial rations, which seldom contain more than 10 percent fish meal because of the relative cost of this ingredient, may be fed to poultry with the assurance that there will be no undesirable effects.

SECTIONAL REVIEWS

Middle Atlantic

NEW JERSEY: The production of fish in the New Jersey area during September was considerably less than for the same month in 1945, while the shellfish production was slightly higher than that in September of last year, according to the Service's Fishery Marketing Specialist in New Jersey.

The dredging of hard clams and oysters have been restricted by the State Shellfish Board, except where adequate planting has been done on private ground and where public beds are definitely known to contain quantities of shellfish adequate to withstand dredging.

The soft clam beds in the vicinity of Barnegat Inlet which were severely damaged by dredging operations several years ago, show signs of natural rehabilitation by early 1947, unless further disturbed by dredging.

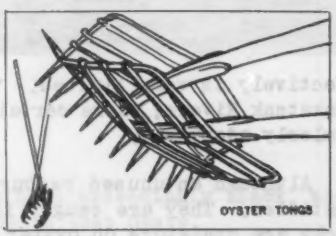
Hard crabs were reported in abundance in the waters of Barnegat Bay.

Chesapeake

VIRGINIA: The 1946-47 oyster season opened in Chesapeake Bay with the largest number of patent-tongers in recent years participating in the fishery, according to the Service's Fishery Marketing Specialist in that area.

Although the catch of the patent-tongers graded below the shaft-tonged oysters, it brought unusually high prices. Boats averaged 30 to 40 bushels a day.

Patent-tonging is permitted only in waters specified in the State regulations. The season is limited to 3 months, ending December 31, although the Commissioner of Fisheries has the power to make certain changes in seasons and areas.



Patent-tongs were devised in the last century by a Maryland man to take oysters beyond the reach of shaft-tongs, which cannot operate in much more than 20 feet of water. When the patent expired, the tongs came into general use. They resemble ordinary tongs, except that they are larger and heavier, and instead of the long wooden handles, or shafts, have ropes which pay them out and allow them to work in any depth of water. They can be made by any blacksmith. A small motorized derrick raises them. Oysters thus taken are held to be inferior to shaft-tonged oysters, because they are usually irregularly shaped and thinner than oysters from shallow water. This is because they are frequently crowded together, buried in mud, and cut off from growth-stimulating light.

Although complete reports of alewife canning in 1946 have not been received, enough data are at hand to indicate that the pack exceeded that of 1945 by approximately 20 percent. Substantially less pickled fish was produced in 1946 because of greater profits offered by the canned product.

The river herring, or alewife, industry has undergone considerable change in recent years. Twenty-five years ago, the fish were processed into the following products: canned roe; canned fish; and salted cut fish, with roe and without. An extensive market for the salted fish was established in the interior of the State, where generations of Virginians had been reared to regard salted river herring as a staple food, as well as a delicacy. At one time, alewives ascended rivers as far as the Blue Ridge mountains, and thousands of citizens took them each spring to salt down. When dams and pollution, as well as increased fishing activity in tidewater areas, cut off this inland resource, salt fish were supplied by the firms along the Bay.

At the present time, salted alewives are almost unobtainable in Virginia. New England and Canada supply most of the salt fish demand with mackerel and cod. Producers have been turning fish formerly salted into vinegar-cured fish because of greater profits from the latter. This pickled product is bought in bulk by Northern packers, who have developed seasoning formulas using wine, spices, or sour cream. After seasoning, the fish are marketed in jars as hors d'oeuvres.

The canning of alewives continues, but other varieties are being added. Formerly, an alewife cannery operated only during the spring runs (approximately April and May). Several Bay canneries now operate the year round, putting up menhaden (from pound-netters), whiting (from ocean trawlers), sea trout, and mackerel roe. The latest pack to be introduced is albacore from the New Jersey Coast.

The 1946 soft crab production exceeded that of 1945. Although not so high as in 1945, prices maintained a good level. Operators of the crab fyke, or peeler trap, reported one of the longest seasons in memory, with the traps producing from May to September. Usually such traps cease to yield about August 1.

The area in which peeler traps function effectively is very limited. They are used principally in the Rappahannock and Piankatank Rivers, where certain characteristics of the shorelines make them particularly adaptable.

Although an unused resource in Virginia, conchs are taken in considerable quantities. They are caught in crab pots off the York River. Crabbers believe conchs are predators on oyster beds, and they destroy each one found.

South Atlantic

Shrimp production along the South Atlantic Coast this season has averaged considerably less than that of the corresponding period in 1945, according to the Service's Fishery Marketing Specialist in that area.

The expected run of shrimp in North Carolina failed to materialize. When several large catches were reported at Engelhard, in Hyde County, the wide publicity brought many boats from other localities to this small port. Although several large catches were obtained, the average catch was less than 100 pounds per trip.

Sorting a Shrimp Trawl Catch

With the shift of the wind from southeast to north and northeast, the beach seiners and long haulers brought out their nets in anticipation of the "mullet shift." Although no large catches were reported through September 30, these fish had been observed coming down the beaches in abundance.

Large quantities of croakers were landed at Atlantic, N.C., during the latter part of August and the first two weeks of September.

The United States Naval Section Base at Morehead City has been acquired by the North Carolina Department of Conservation and Development and will be under the direction of the Commissioner of Fisheries. Among other purposes, the base will be used as an anchorage for the fleet of vessels used by the Commissioner to enforce fishing regulations. The Commission also plans the establishment of a fishery biological laboratory, aquarium, and museum at the base.

The University of North Carolina has undertaken a survey of the fisheries of that State in an effort to determine the cycle of abundancy of the North Carolina fisheries, and to assist in the economic development of these resources.

Gulf

MISSISSIPPI: The fishing thus far in 1946 has been exceedingly slack, according to the Service's Fishery Marketing Specialist in that State.

The production of crabs began to decline about mid-June, and by the latter part of the month none were being taken. The production has been estimated by many crab producers as only 25 percent of normal. It is reported that the yield of crabmeat is even lower, since the recovery of meat began to drop simultaneously with the scarcity of crabs. Because there is no uniform system of grading, and the crabs are usually boiled rather than steamed, crabmeat from the Gulf area

seldom commands as high a price as crabmeat from Chesapeake Bay. Therefore, considerable trouble has been experienced in marketing Gulf crabmeat at a profit.

Shrimp in Mississippi waters have been less plentiful this season than at any time in the history of the seafood industry, according to officials of the Mississippi Seafood Commission. The catch was 20,000 barrels less than during the corresponding period in 1945.

FISH IN THE SCHOOL LUNCH PROGRAM

Every producer or primary wholesaler of fish and fishery products should make his interest in the school lunch program felt by everyone whom he supplies. In his contacts with the trade, he should inquire what it is doing to establish relations with schools and school systems. He should suggest that it offer to help school authorities to make full use of fishery products in their lunchroom activities.

An educational process is involved in meeting this challenge. It is not enough to offer to sell fish to schools. In many instances, school lunchroom authorities are not familiar with fishery products in detail. The trade must work with them to the end that they can serve fish attractively, cheaply, and without unusual efforts. Trade literature, such as recipe pamphlets, should be made available to the schools.

An interest in fishery products must be awakened in the pupils, if it does not already exist. The dealer can help the schools make the use of fish an adventure and a pleasure in many areas where fish on the menu has been a rarity.

TECHNOLOGICAL RESEARCH IN SERVICE LABORATORIES
SEPTEMBER 1946
Abstracts of Scientific Papers

Announcement of the first series of abstracts of scientific articles (I. Spoilage of the Nitrogenous Fraction of Fish. 1. Microbiological flora in fish.) was made in the March 1946 issue of Commercial Fisheries Review. The second series to become available has been prepared by Dr. G. Ivor Jones, biochemist, Seattle Fishery Technological Laboratory, and is entitled:

"II. Vitamin A Assay Methods."

The cards are of standard 3-inch by 5-inch size, one of which is reproduced below as a sample. The material covered is highly technical and will be of interest mainly to specialists.

II DEPT. OF THE INTERIOR, FISH & WILDLIFE SERVICE 2.003

ADAMSON, D.G.M. AND EVERS, N. 1941.

EFFECT OF POLAR SOLVENTS ON VITAMIN A DETERMINATIONS BY THE SPECTROPHOTOMETRIC METHOD.
ANALYST 66, 106-7.
C.A. 35, 7994, 1941.

THE BRIT. PHARM. OF 1932 PRESCRIBES THAT UNSAPONIFIABLE MATTER SHALL BE DISSOLVED IN CYCLOHEXANE OR IN ABS. EtOH. IN THE ASSAY OF COD-LIVER OIL FOR VITAMIN A IT WAS FOUND THAT II DETNS. OF THE VITAMIN A CONTENT GAVE AN AV. VALUE 114% OF THAT OBTAINED WITH CYCLOHEXANE WHEN ISOPROPYL ALC. WAS USED FOR DISSOLVING THE UNSAPONIFIABLE MATTER. ON THE OTHER HAND THE AGREEMENT WITH VALUES OBTAINED WITH DEHYDRATED EtOH AGREED WELL WITH THOSE OBTAINED WITH THE ISOPROPYL ALC. WHEN THE VITAMIN DETN. IS MADE ON THE OIL ITSELF IT MAKES LITTLE DIFFERENCE WHICH SOLVENT IS USED. PROBABLY FREE VITAMIN A (ALC.) FORMS A COMPLEX IN POLAR SOLVENTS WHICH GIVES A HIGHER EXTINCTION COEFF. THAN IS OBTAINED IN NONPOLAR SOLVENTS AND PROBABLY ITS ESTER FORMS NO SUCH COMPLEX. FOR THIS REASON IT SEEMS DESIRABLE TO USE A NONPOLAR SOLVENT FOR DETNS. ON THE UNSAPONIFIABLE MATTER.

The Roman numeral in the upper left-hand corner indicates the general classification in which the card belongs (in this case, Vitamin A Assay Methods). The arabic numerals in the upper right-hand corner indicate the general contents of the paper in accordance with a cross-indexing system that has been worked out.

The second series, Vitamin A Assay Methods, is now available upon request from the Fishery Technological Laboratory, Fish and Wildlife Service, 2725 Montlake Boulevard, Seattle 2, Washington. As indicated above, the supply is limited, and distribution must be restricted to those in the industry who have a genuine need for these cards. Additional series will be announced in Commercial Fisheries Review as they are completed.

Ketchikan, Alaska

Samples of clams dug in this area were forwarded to College Park, Md., to be tested for mytilotoxine. One hundred pounds of salmon viscera and other trimmings were frozen and sent to Seattle, Wash., to be tried as fish-hatchery feed. From five species of salmon, 890 cans of separated viscera and other trimmed portions were processed or frozen, and they will be analyzed to determine the practicability of using these byproducts for human or animal feeding.

Other products canned experimentally were halibut fillets and halibut head paste, loaf, and sausage.

Boston, Mass.

Samples of commercial preparations of canned creamed finnan haddie and frozen precooked tuna were examined and tested. Eastport, Maine, sardine-canning experiments were carried out with the use of benzoates of sodium and magnesium in the brining tanks and with pressure steaming of the fish before they were packed. Neither attempt led to significant improvement. Four packs of spiced sardines were prepared.

With the mobile laboratory at New Bedford, Mass., bacteriological examinations of fillet-brining tanks were conducted and showed that, although brining is an effective aid in reducing the bacteria count of the fillets, the brine may come to contain a great number of bacteria, if it is held too long without being changed. The addition of a hypochlorite solution to the wash buckets used by the filleters for rinsing their knives and gloves also helped to lower the bacteria count of the fillets.

Mayaguez, Puerto Rico

Considerable aid was given in the planning of the construction of a 4-acre farm fish pond at Barceloneta. At a meeting with the fishermen of Naguabo, plans were made for obtaining supplies of gear and other materials and for marketing the catch more satisfactorily.

Twenty-three samples of fish from the Virgin Islands were examined, but no evidence of toxicity was found.

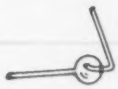
Seattle, Wash.

A Washington concern was assisted in the planning of an expansion of its plant.

Samples of anchovies were analyzed. Their oil content was found to fluctuate widely.

A series of pilchard meal samples were prepared for use in the development of better oil analysis methods.

The effect of the use of N.D.G.A. as an antioxidant is being tested on packaged pink salmon in frozen storage.



College Park, Md.

One hundred fifty-six packages of non-fatty fillets in cellophane, vinylite, saran, aluminum foil, polyethylene, and visten were prepared and frozen. They will be examined periodically to determine the merits of the wrappers.

After 2 months of frozen storage, no difference was observed between crabmeat samples packed in perforated cans and in heat-sealed cellophane bags. In the regular monthly examination of the frozen oysters, it was observed that an appreciable loss in moisture was beginning in one recently-developed package, while in one of the laminated vinyl packages there was a slight chemical odor although flavor was not affected. The foil packages are remaining in good condition.

Assistance was given in the design of shore plants to be installed at Crisfield, Md.

Samples of feeds submitted by the Association of Official Agricultural Chemists were analyzed for calcium and phosphorus as part of the Service's collaboration in the Association's comparisons.

Work was begun on the extraction of sterols from quahogs.

Thirty-five bleaching tests were run on refined menhaden oil with various amounts of adsorbents and organic peroxides. By fractional crystallization of the refined oil from a solvent, a good yield was obtained of a light, cold-pressed oil having an iodine number of 193.

Seven 1-pound tins of crabmeat were bacteriologically analyzed.

In tests conducted on Lake Erie in the mobile laboratory, it was shown that with the recently developed enrichment medium for enterococci a presumptive test could be run in 7 to 10 hours. Further work has since shown that both a presumptive and confirmation test can be run within 36 hours.

A temporary bacteriological laboratory was set up at Milford, Conn.

Analyses of Fishery Products

Unpublished data from the U. S. Fish and Wildlife Service Laboratory at College Park, Maryland.
Miscellaneous single analyses for food constituents, such as vitamin assays, mineral analyses, dry matter determinations, etc.

Food	Amount grams	Protein grams	Fat grams	Carbohydrates grams	Calories	Calcium mg.	Phosphorus mg.	Iron mg.	Vit. A int. units	Thiamine micrograms	Riboflavin micrograms	Niacin mg.
Fresh or Cooked:												
Angler fish, simmered	100	23.9	1.1		105							
Carp, smoked fillets	100	17.1	6.5		125							
Croaker, baked at 375° F. for 20 minutes	100	28.6	7.1		180					136	90	5.5
Croaker, baked at 500° F. for 10 minutes	100	25.1	5.2		145					168	100	5.9
Herring, milt, fresh	100	14.0	4.3		95					None	160	
Skate wings, simmered	100	26.3	0.7		110							
Squid, boiled	100	19.8	1.4		90							
Striped bass, broiled	100	24.5	5.9		150							
Striped bass, pan fried	100	24.1	10.7		195							
Clams, hard, fresh meats	100	8.9	0.5	4.2	55							
Clams, Quahogs bay, steamed in shell	100	13.5	0.5	8.9	95					None	146	
Clams, Quahogs ocean, simmered	100	18.2	0.3	2.8	85					None	266	
Mussels, New England, simmered	100	17.9	3.1	5.0	120							
Oysters, Eastern, raw	100	8.5	1.6	4.2	65				500	180	80	
Canned:												
Alewives	100	16.2	7.9		135							
Herring roe	100	16.0	7.9		135			1.42				
Mackerel, California	100	19.3	15.9		220	343.0	384.0	2.61				
Shad, Columbia River	100	16.9	8.8		150			0.97				
Tuna, bluefin	100	21.6	22.6		290			1.48				
Clams, Atlantic, hard	100	9.6	0.9	4.2	65	87.3	125.3	6.23				
Clams, minced, razor	100	8.9	0.7	2.6	50	13.5	140.0	1.51				
Clams, Pacific, hard	100	7.2	2.5	6.1	75	10.0	101.0	3.10				
Crabmeat, Dungeness	100	20.5	1.2		95	52.0	213.0	0.94				
Oysters, Atlantic	100	9.2	2.7	2.1	70	48.4	126.4	8.36				
Oysters, Gulf	100	9.4	2.4	1.8	65	41.7	135.0	9.38				
Shrimp, dry pack	100	28.3	2.0		130	126.2	286.0	3.10				
Shrimp, wet pack	100	15.8	1.0		70	62.6	155.0	4.75				
Chowder, Manhattan clam*	100	2.7	2.6	9.3	70	40.1	51.9	1.77				
Chowder, New England clam*	100	6.5	1.2	6.5	65	28.8	85.9	4.65				
Chowder, New England fish*	100	7.3	1.4	5.0	60	22.9	67.9	3.09				

*To be mixed with an equal volume of water or milk.

Discussion of this table appears on p. 21.

Seven water samples were prepared and shipped by air to College Park for further study.

The table which appears on page 20 summarizes miscellaneous single analyses carried out at the Fishery Technological Laboratory, College Park, Md. These analyses are released in response to numerous requests for such information, but may not be truly representative of the various products.

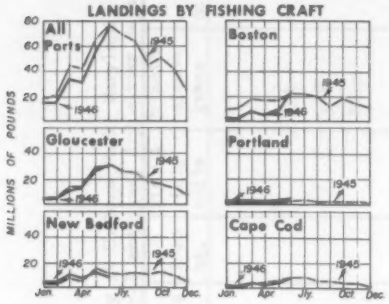
FISHERY TECHNOLOGICAL LABORATORIES AND STATIONS

	Address	In Charge
Fishery Technological Laboratory	P. O. Box 128, College Park, Md.	Dr. L. A. Sandholzer Tel.- WArfield 5800
Fishery Products Laboratory	P. O. Box 647, Ketchikan, Alaska.	H. W. Magnusson, Tel.- 540
Fishery Research Laboratory	P. O. Box 1345, Mayaguez, P. R.	P. Vergne Roig, Tel.- 390
Fishery Technological Laboratory	2725 Montlake Blvd., Seattle 2, Wash.	M. E. Stansby, Tel.- EAst 5039
Fishery Technological Laboratory	Rm. 710, Appraisers Stores Bldg., 408 Atlantic Ave., Boston 10, Mass.	J. F. Puncochar, Tel.- LIberty 0168
Fishery Technological Station	c/o B. H. Wilson Fisheries Co., Eastport, Me.	Wm. S. Hamm, Tel.- 141

FRESH AND FROZEN FISH

New England

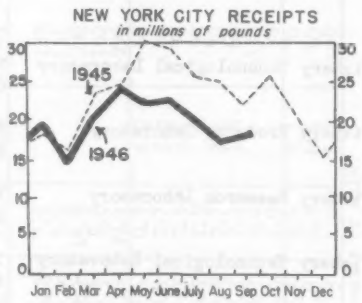
LANDINGS DURING JUNE: Landings by fishing craft during June at Boston, Gloucester, New Bedford, Portland, and ports on Cape Cod totaled 76,854,000 pounds--a decrease of 3 percent in quantity landed as compared with June 1945. Total landings during the first 6 months of 1946 amounted to 227,550,000 pounds compared with 268,911,000 pounds landed during the corresponding period of 1945. Landings at Boston during June were nearly 300,000 pounds more than in June a year previous, but the 44.8 million-pound decrease in the 1946 5-month total at this port was still reflected in the half-year total--49.2 million pounds--as compared with 93.7 million pounds in 1945, according to Current Fishery Statistics No. 288.



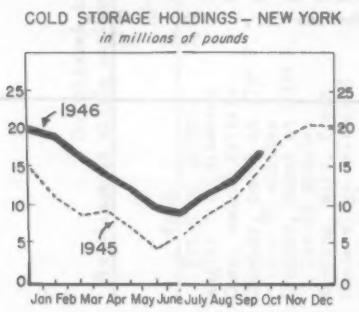
Middle Atlantic

NEW YORK CITY RECEIPTS: Landings and receipts of fresh and frozen fishery products in New York City during September totaled 18½ million pounds, according to the Service's local Market News Office. This was an increase of 6 percent over August, but was 17 percent below September 1945. Largest fish items were groundfish, salmon, halibut, scup, and butterfish. Shrimp, clams, and scallops were the foremost shellfish.

During each succeeding week of the month, the demand for fish increased and prices reached a new high; however, because of storms along the coast, receipts were comparatively light.



NEW YORK CITY COLD-STORAGE HOLDINGS: Holdings of fish and fishery products in New York City cold-storage warehouses amounted to 15,908,000 pounds on October 1. This figure represented an increase of 11 percent over holdings on September 1, but was less than 1 percent above the October 1, 1945 holdings, according to the Service's local Market News Office. Increases in salt-water items such as haddock fillets, halibut, sablefish, salmon, and herring; in fresh-water species such as whitefish, sturgeon, spoonbill catfish, and cisco; and in shellfish stocks of lobster tails, shrimp, and squid were mainly responsible for the augmented total holdings. Although cod fillets declined about 40 thousand pounds between September 1 and October 1, they remained the heaviest item held.



Because the species that made up the greater percentage of the total increase are easily marketed, large quantities already frozen were brought into New York from producing points. This contributed to a decline in holdings in the producing areas, while increasing the holdings in New York City.

Chesapeake

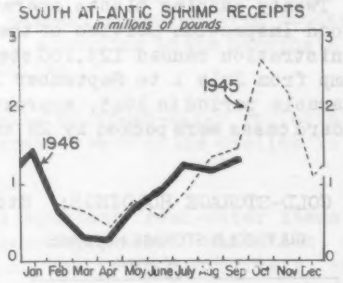
PRODUCTION: Production in the Hampton Roads area during September decreased more than 50 percent compared with the previous month, the Service's local Market News Office reported. Normally, at this season, fishing is at a minimum in this area. Pound nets were taken up during the month and trawling operations begun. Very little activity will be expected of the draggers until sometime in November, when cooler weather causes fish to congregate into schools.

Production of crabmeat increased from 244,000 pounds in August to 265,000 pounds in September, a rise of 9 percent.

The shucked oyster production increased 90,000 pounds over August.

South Atlantic

RECEIPTS: Shrimp production for Florida and the other South Atlantic States during September totaled 1,390,000 pounds (heads off). This was an increase of 24 percent compared with the previous month, but was 6 percent less than landings in September 1945, according to the Service's Market News Office at Jacksonville. Shrimp production was slightly curtailed in September due to a week or more of bad weather at sea.

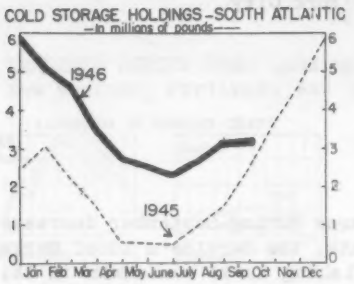


Georgia led the other States in production with a total of 654,000 pounds, followed by Florida with 286,000 pounds, North Carolina with 249,000 pounds, and South Carolina with 202,000 pounds. Compared with August, Florida was the only State that showed a decline in production, while the others displayed a gain.

Production in all States during September showed a decline, except in South Carolina, when compared with the same month in 1945.

The average size of shrimp was larger in September, with correspondingly higher prices.

COLD-STORAGE HOLDINGS: Holdings of fish and shellfish in 5 major cold-storage warehouses in the South Atlantic States totaled 3,150,000 pounds on October 1, according to the Service's Market News Office at Jacksonville. Compared with holdings on September 1, this was an increase of 47,000 pounds, and it was 880,000 pounds more than October 1, 1945.



Items held in storage in greatest quantity were cod, haddock, pollock, and rosefish fillets, mullet, Spanish mackerel, whiting, king whiting, shrimp, and scup.

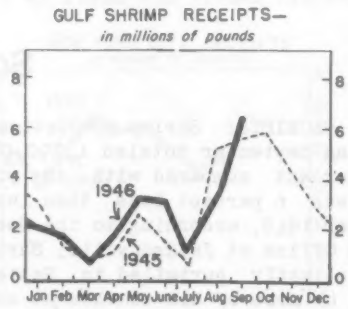
Fish stocks declined 27,000 pounds, while shellfish holdings increased 74,000 pounds during September. The decline in the quantity of fish held was due to decreases in stocks of fillets, mullet, and Spanish mackerel. The shellfish increase was based entirely on the rise in holdings of shrimp.

Gulf

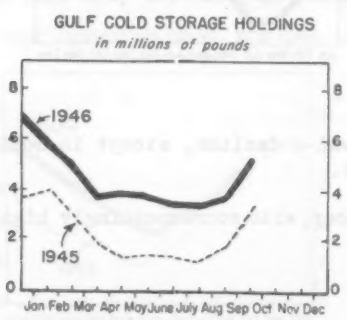
PRODUCTION: Shrimp production in the Gulf area during September was 27 percent greater than that of August, but was approximately 17 percent less than September 1945, according to the Service's Market News Office at New Orleans.

The shrimp closed season for inland and shallow waters of Texas in the Gulf area opened September 1, resulting in appreciable quantities of shrimp being landed.

Twenty canning plants operating under the Seafood Inspection Service of the Food and Drug Administration canned 123,100 standard cases of shrimp from July 1 to September 28. During the comparable period in 1945, approximately 60,000 standard cases were packed by 28 canning plants.



COLD-STORAGE HOLDINGS: Stocks of shrimp in 11 cold-storage warehouses in the Gulf States totaled 2,999,000 pounds on October 3, according to the Service's Market News Office in New Orleans. This represented an increase of 80 percent over holdings on August 29 and was 31 percent greater than stocks on October 4, 1945.

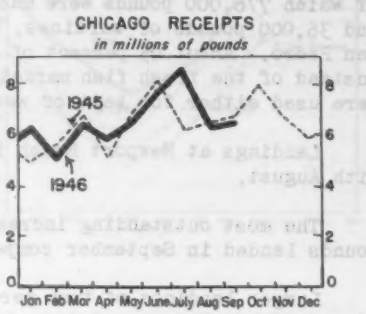


The movement of shrimp into cold-storage warehouses during September exceeded withdrawals by 26,000 pounds.

Stocks of salt-water fish totaled 1,800,000 pounds on October 3.

Great Lakes

CHICAGO RECEIPTS: Receipts of fresh and frozen fishery products in the Chicago wholesale fish market during September amounted to 6,730,000 pounds. This represented an increase of 7 percent over receipts in August, but was a decline of 1 percent compared with those in September 1945, according to the Service's local Market News Office.



Greater deliveries of lake trout, whitefish, and yellow pike were received during the month than in September 1945; however, smaller receipts of other varieties held the total poundage down.

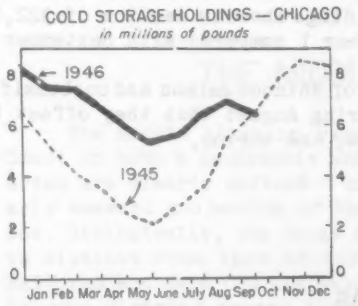
Salt-water receipts in September were 26 percent below those in August and 30 percent less than September 1945. Responsible for these declines were the lower than average receipts of salmon and eastern varieties.

Halibut receipts were greater than in September 1945.

Shrimp deliveries for the month amounted to 697,000 pounds. Compared with August, this was an increase of 30 percent, but was 30 percent below the September 1945 receipts.

Oysters made their seasonal appearance in September, although in limited quantities. Oysters in the shell totaled slightly over one-third of the 1945 deliveries, while shucked oyster receipts were comparable to those of September 1945.

CHICAGO COLD-STORAGE HOLDINGS: Total holdings of fishery products in Chicago cold-storage warehouses on October 3 amounted to 6,350,000 pounds. This was a decline of 6 percent compared with stocks held on September 5, according to the Service's local Market News Office.



Withdrawals of fresh-water varieties represented the greater part of the decline in total holdings.

The most important fresh-water items held, in order of poundage, were: whitefish, chubs, lake trout, and smelt. Frozen fillets, chiefly rosefish and cod; halibut, whiting, salmon, and sablefish were the foremost salt-water items held. Shrimp, scallops, and squid represented the leading shellfish items in storage.

Very little shrimp found its way into storage during the month, as there was a ready market for all fresh deliveries.

Pacific

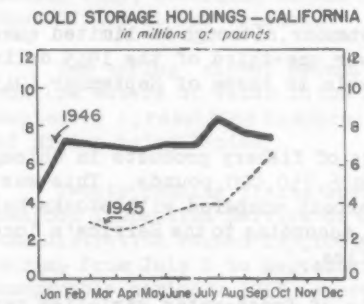
RECEIPTS AT SOUTHERN CALIFORNIA PORTS: Landings of fresh fish at the ports of Santa Monica, San Diego, and San Pedro during September totaled 1,358,000 pounds, of which 776,000 pounds were mackerel. Also landed were 119,000 pounds of anchovies and 36,000 pounds of sardines, according to the Service's Market News Office at San Pedro. About 95 percent of the mackerel landed went to the mackerel canneries instead of the fresh fish markets. About 99 percent of the anchovies and sardines were used either for bait or were salted.

Landings at Newport Beach increased 39,000 pounds during September compared with August.

The most outstanding increase in landings occurred in swordfish, with 63,000 pounds landed in September compared with 33,000 pounds in August.

Larger landings of tuna were recorded at all three ports than during the previous month. This was due to the fact that tunas were not delivered to the canneries while price negotiations were in progress with the Office of Price Administration. Instead, they were sold to the fresh fish wholesale dealers, who froze them pending price agreements.

CALIFORNIA COLD-STORAGE HOLDINGS: Stocks of fish and shellfish in California cold-storage plants on October 1 totaled 7,265,000 pounds. This was a decrease of 463,000 pounds compared with September 1, but was an increase of 638,000 pounds compared with October 1, 1945, according to the Service's Market News Office at San Pedro.



Freezings displayed a slight increase, with 596,000 pounds frozen during the month compared with 505,000 pounds frozen in August.

Shrimp holdings showed a decline of 322,000 pounds on October 1 compared with September 1.

Freezings of chinook salmon and unclassified salmon were so much greater in September than during August that they offset the decreased freezings of flounders, swordfish, tuna, and shrimp.

United States

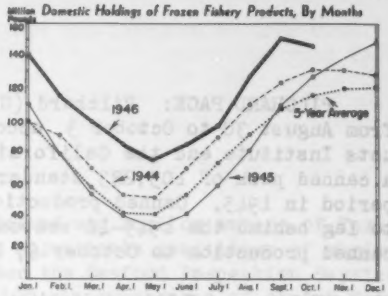
COLD-STORAGE FREEZINGS AND HOLDINGS: Reversing the upward trend usual at this season, holdings of frozen fish and shellfish declined 5 million pounds during September to reach a total of 147,085,000 pounds on October 1, the Fish and Wildlife Service of the Department of the Interior reported on October 19, when issuing Current Fishery Statistics No. 291.

Last year, during the same period, holdings increased 18 million pounds, according to the Service.

Another indication of the heavy consumption of fish was the small quantity frozen, 27,372,000 pounds, compared with 37,940,000 in August. In September 1945, some 33,257,000 pounds were frozen.

Fish and Wildlife Service officials said that the decline in frozen fish inventories had been very generally distributed throughout the country, and among the various kinds of fish in storage.

Stocks on October 1 consisted of 124,581,000 pounds of salt-water fish, 8,792,000 pounds of lake and river fish, and 13,711,000 pounds of shellfish.



THE MIDDLE ATLANTIC REGION

The Middle Atlantic region is a natural division of the Atlantic Coast in both a geographic and a biological sense. Its geographic boundaries are clearly defined: on the south, Cape Hatteras, the most easterly seaward projection of the North Carolina shore; on the north, Cape Cod. Biologically, the fauna of this long, curving Middle Atlantic shore is distinct from that of the North and South Atlantic coasts. Cape Hatteras and Cape Cod are natural boundaries of the marine world. There is some straying beyond them, some overlapping of ranges, but for the most part the truly southern, tropical or semi-tropical fishes live below Hatteras, the typically cold water fishes beyond and north of Cape Cod.

--Senate Document No. 51

CANNED AND CURED FISH

Pilchard

PILCHARD PACK: Pilchard (California sardine) landings totaled 14,165 tons from August 30 to October 3, according to reports of the California Sardine Products Institute and the California Division of Fish and Game. This resulted in a canned pack of 103,283 standard cases, 725,326 cases below the corresponding period in 1945. Canned production for the 1946-47 season to October 3 continued to lag behind the 1945-46 season with only 850,953 standard cases packed. The canned production to October 6, 1945, was 1,120,865 standard cases.

California Sardine Landings, Canned Pack and Byproducts

Item	Unit	MONTH 1946 Aug.30-Oct.3	MONTH 1945 Aug.26-Oct.6	SEASON 1946-47 Aug.1-Oct.3	SEASON 1945-46 Aug.1-Oct.6
Landings	Tons	14,165	124,232	30,933	165,592
Canned	1 lb.ovals-48 per case	11,812	320,195	78,314	447,208
	1 lb.talls-48 per case	87,853	462,902	175,535	609,524
	½ lb.fillets-48 per case	-	91	3,536	91
	½ lb.round-96 per case	3,392	3,542	3,799	4,668
	Unclassified	226	41,879	8,728	59,374
	TOTAL, Std.1 lb.-48 per case	103,283	828,609	269,912	1,120,865
		September	September	Aug.1-Sept.30	Aug.1-Sept.30
Meal	Tons	1,574	12,405	2,355	20,099
Oil	Gallons	359,114	3,428,279	519,987	5,120,702

Salmon

SALMON PACK: The season's pack of Alaska canned salmon totaled 3,879,955 standard cases on September 28. This was 470,516 cases below production to September 29, 1945, according to the Alaska Salmon Pack Report No. 15, issued by the Service's Market News Office at Seattle. Total cases of canned pink salmon showed a decline for the season of 197,995 cases compared with the 1945 season to September 29. Production of red salmon fell 136,536 cases, and chum salmon decreased 107,804 cases.

Alaska Salmon Pack to and including Sept. 28, 1946

District	King	Red	Pink	Chum	Coho	Total
Western	5,055	646,944	4,039	36,948	1,478	694,464
Central	25,048	333,236	1,045,896	235,001	91,860	1,731,041
Southeastern	1,771	60,807	991,713	309,248	90,911	1,454,450
Total 1946, Sept. 28	31,874	1,040,987	2,041,648	581,197	184,249	3,879,955
All districts--						
1945, Sept. 29	42,514	1,177,523	2,239,643	689,001	201,790	4,350,471
1944, Sept. 30	33,741	1,567,533	2,079,296	981,374	184,646	4,846,590
5-year average, Sept. 28	40,811	1,354,305	2,818,160	821,319	242,873	5,277,468
Total pack, 1945	42,514	1,177,523	2,239,643	689,001	201,790	4,350,471
" " , 1944	37,025	1,581,416	2,092,632	994,487	187,499	4,893,059
5-year average	43,229	1,362,352	2,816,637	847,780	256,428	5,326,426

The heaviest canned production of red and pink salmon occurred in the central Alaska area, while the greatest amount of canned chum salmon was produced in southeastern Alaska.

Shrimp

SHRIMP PACK: The shrimp closed season for inland and shallow waters of Texas in the Gulf area opened September 1, resulting in appreciable quantities of shrimp being landed. Twenty canning plants, operating under the Seafood Inspection Service of the Food and Drug Administration, canned 123,100 standard cases of shrimp from July 1 to September 28. Compared with the production of 28 canning plants for the corresponding period in 1945, this was an increase of 63,100 cases.

Wet and Dry Pack Shrimp in all Sizes in Tin and Glass--Standard Cases*

MONTH		SEASON		
1946 Sept.1-28	1945 Sept.2-29	1946-47 July 1-Sept.28	1945-46 July 1-Sept.29	3-yr.average July 1-Sept.29
64,836	28,174	123,100	59,926	152,640

*All figures on basis of new standard case--48 No. 1 cans with 7 oz. per can in the wet pack and 6½ oz. per can in the dry pack.

Tuna and Mackerel

TUNA AND MACKEREL PACK: The production of canned tuna by California packers during September totaled 445,135 standard cases, 10 percent less than the August pack, but 52 percent greater than that of September 1945, according to information furnished by the California Division of Fish and Game. Total production for the

California Pack of Tuna and Mackerel--Standard Cases*

Item	September 1946	August 1946	September 1945	Nine mos. ending with Sept.-- 1946	1945
	Cases	Cases	Cases	Cases	Cases
Tuna:					
Albacore	32,508	143,984	70,358	359,079	394,897
Bonito	35,458	25,327	14,751	66,034	19,903
Bluefin	17,242	54,073	12,531	307,973	257,244
Striped	149,996	97,327	88,704	490,124	217,567
Yellowfin	106,020	74,069	70,524	1,590,189	1,098,998
Yellowtail	1,586	7,235	3,540	36,251	6,661
Flakes	102,325	92,817	31,644	747,167	635,174
Tonno style	-	-	-	-	16,198
Total	445,135	494,832	292,052	3,596,817	2,646,642
Mackerel	138,888	2,428	73,271	195,225	140,739

*Standard cases of tuna represent cases of 48 7-ounce cans, while those of mackerel represent cases of 48 1-pound cans.

first 9 months of the year amounted to 3,596,817 cases, 36 percent more than the corresponding period of 1945.

The pack of mackerel for September totaled 138,888 standard cases, 90 percent above September 1945. Only 2,428 cases were canned during the previous month. The 9-month total of 195,225 cases was 39 percent higher than the pack during these months in 1945.

THE GULF AND SOUTH ATLANTIC FISHERIES

Ever since the first settlements were made in the region, the waters bordering the southern Atlantic Coast and the shores of the Gulf of Mexico have furnished food. Shrimp, oysters, crabs, and shorefish, abundant in the warm southern bays and sounds, insured the early colonists against starvation and later formed an article of trade with settlements removed from the coast, upriver and in the foothills of the mountains. Little by little the fisheries of the region developed, and now the South supplies the United States with practically all of its shrimp, a third of its crabs, a fourth of its oysters, and a number of choice fishes that are not taken anywhere else in abundance, like the red snapper, the Spanish mackerel, and the pompano.

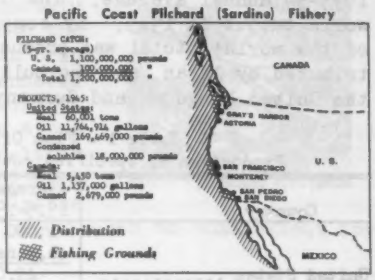
Although mature in years, the fisheries of the South Atlantic and Gulf Coasts have by no means completed their development. With a coastline more than 2,500 miles long as the crow flies, the region produces only a little more than half a billion pounds of fishery products--14 percent of the total yield of the fisheries of the United States and Alaska. With a bewildering variety of life in its waters--more kinds of fish and shellfish than are found anywhere else in the country--the region has developed only five major fisheries: the menhaden, shrimp, mullet, crab, and oyster industries. Of all other species available, none are caught in quantities exceeding 10,000,000 pounds.

--Conservation Bulletin No. 37

FISHERY BYPRODUCTS

Oil and Meal

PRODUCTION: The production of fish oils during August totaled 3,147,466 gallons, a decline of 809,541 gallons compared with August 1945. This brought the total for the 8-month period to 9,259,803 gallons, 59,015 gallons below the corresponding period in 1945, according to the Service's Current Fishery Statistics No. 295.

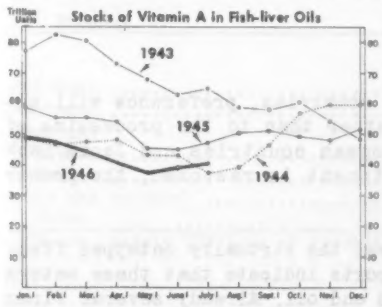


Complete data are not available on meal and scrap, but items which normally account for about 94 percent of the total production show an output of 29,082 tons during August, 2,635 tons less than in August 1945. The 8-month total--100,490 tons--was 2,845 tons below the corresponding period in 1945.

As in July, menhaden oil and meal were the chief products for August, accounting for 30 percent and 28 percent, respectively, of the total productions.

Vitamin A

STOCKS AND PRODUCTION: U. S. stocks of vitamin A in fish-liver oil on July 1 were reported at 40.5 trillion units, an increase of 6 percent above stocks held on June 1, but 14 percent less than those of July 1, 1945, according to the Service's Current Fishery Statistics No. 292.


Stocks of Vitamin A in Fish-liver Oils
Trillion Units
1943
1945
1946
1944
Jan.1 Feb.1 Mar.1 Apr.1 May 1 June 1 July 1 Aug.1 Sept.1 Oct.1 Nov.1 Dec.1

Production of vitamin A during June totaled 5.7 trillion units compared with 6.8 trillion units produced during June 1945. Total production during the first 6 months of 1946 amounted to 27.5 trillion units as compared with 28.4 trillion units produced during the corresponding period of 1945.

Receipts of livers during June totaled 1,748,000 pounds, containing about 7.1 trillion units of vitamin A. During the same month of 1945, 1,781,000 pounds of livers, having a vitamin A content of 8.4 trillion units, were received.

OTHER FISHERY NOTES

Fish Oils--World Production and Trade 1/

The 1945 world production of fish oils, not including whale, seal, and shark-liver oils, is roughly estimated at 160,000 short tons, which is about half the 1935-39 annual average. The United States produced more than 50 percent of the world output in 1945. By comparison, during the prewar period about 35 percent of the world's total was produced in the United States, around 27 percent was contributed by Japan, and the bulk of the remainder was processed in Norway, Iceland, the United Kingdom, and Germany. (See table 1.)

Table 1 - Fish Oil (excluding whale and shark-liver oils): Production by specified countries, averages 1925-29 and 1935-39, annual 1940-45

Country	Average 1925-29	Average 1935-39	1940	1941	1942	1943	1944	1945
	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons
United States	42.0	110.0	78.7	102.6	70.6	80.8	100.7	86.1
Japan	25.8	1/ 85.0	36.7	25.0	7.9	7.0	1.2	.7
Norway	-	2/ 30.0	2/ 20.0	2/ 10.0	2/ 5.0	-	-	5.0
Iceland	-	25.0	31.0	34.0	32.0	35.0	33.0	25.0
United Kingdom	-	2/ 20.0	-	-	-	-	-	-
Canada 3/	-	1/ 16.4	15.2	11.0	-	-	4/ 9.0	4/ 10.5
Germany	-	2/ 15.0	-	-	-	-	-	-
Newfoundland	-	-	-	-	-	5/ 4.4	5/ 4.1	-
Italy	-	2/ 5.0	-	-	-	-	-	-
Portuguese Angola	-	1.1	-	-	-	-	-	3.0
Portugal	-	6/ 1.0	-	1.3	1.0	1.3	1.3	-
Argentina	-	6/ .2	-	-	1.4	-	-	-
Spain	-	-	-	-	.1	-	-	-
Estimated world total	-	315.0	225.0	210.0	155.0	165.0	170.0	160.0

1/4-year average.
2/Estimate.
3/British Columbia only.
4/Pilchard oil only.
5/Year ending October 31.
6/1 year only.
Compiled from official and unofficial sources.

Owing to the critical food situation in many countries, preference will undoubtedly be given to direct human consumption rather than to the processing of fish into oil. In addition, several of the European countries and Japan lack adequate fishing craft and supplies. Until equipment is restored, the prewar output of fish is not likely to be reached.

During the war, considerable interest arose over the virtually untapped fishing resources off the coasts of South America. Reports indicate that these waters abound in fish which are important as a source of food and oil. Already several firms have started shark-liver and fish-oil projects, notably in Argentina, Brazil, Chile, and Peru.

Two other potential resources of fish oil in the Western Hemisphere are the anchovies along the California coast and the waste from the Alaskan salmon pack. The total waste of the salmon pack amounts to 75,000 or 100,000 tons a year, of which only a small portion is processed into oil.

1/ Reprinted from Foreign Agricultural Report No. 11, Fats and Oils--World Production and Trade (U. S. Department of Agriculture, August 1946), written by the staff of the Fats, Oils, and Price Division, International Commodities Branch, Office of Foreign Agricultural Relations, USDA.

The fish oil most universally produced, exclusive of marine-animal and shark-liver oil, is derived from pilchards (sardines). In the United States during the 1920's, menhaden was the largest source of fish oil, but lost its prominence owing to the phenomenal growth of the Pacific coast pilchard- and herring-oil industries.

Fish oils have a wide range of uses and possess a certain degree of interchangeability with animal and vegetable fats and oils. In the United States, approximately 75 percent of the pilchard and herring oil goes into the manufacturing of soap. The second major use for fish oils is in the manufacture of insecticidal sprays, menhaden oil being the principal constituent. The tempering of steel and the manufacturing of linoleum and certain types of paint are other important industrial uses. Cod-liver oil enters largely into medicinal and pharmaceutical products, and inferior grades find a substantial outlet in the leather-processing industry. In Europe, fish oils are used to some extent for edible purposes.

Production by Regions

Western Hemisphere

UNITED STATES: The United States is the largest producer of fish oil in the world and is a leading exporter and importer of this product. The 1945 output of fish oil, excluding marine-animal and fish-liver oils, was estimated at 86,100 short tons. About 50 percent of the production was pilchard (sardine) oil; menhaden oil comprised around 33 percent; and herring, tuna, and mackerel made up the remainder (table 2).

Table 2 - Production of Fish Oil in the U. S. by kinds, average 1935-39, annual 1940-45

Product	Average 1935-39	1940	1941	1942	1943	1944	1945
	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons
Pilchard	75.7	47.2	67.8	47.0	52.2	67.8	44.1
Menhaden	16.8	21.6	22.6	19.2	21.5	22.7	28.5
Herring:							
Alaska	16.5	7.8	10.8	3.1	6.0	8.6	10.6
Maine	.9	.5	.5	.5	.3	.4	.3
Tuna and mackerel	1.1	1.6	.9	.8	.8	1.2	1.0
Total	111.0	78.7	102.6	70.6	80.8	100.7	1/86.1

1/Approximately 750 tons of groundfish oil and 850 tons of miscellaneous oils included.

United States consumption of cod-liver and cod oil rose from around 7,500 tons in 1921 to nearly 34,000 in 1937. It fell sharply during the war, however, as a result of reduced imports. United States production of these oils is small compared with that of Norway, Iceland, and Newfoundland, which normally export a large part of their cod-liver oil production to the United States.

NEWFOUNDLAND: The Grand Bank off the coast of Newfoundland is the most important source of cod. Virtually the entire production of fish oil in Newfoundland is exported, since domestic consumption is insignificant. Common cod oil usually makes up more than 50 percent of the fish-oil exports, cod-liver oil about one-

third, and herring and miscellaneous oils the remainder. The United States and Canada are leading purchasers of Newfoundland fish oils.

CANADA: Approximately half of Canada's output of fishery products comes from British Columbia, where herring and pilchards (sardines) are the mainstay of the fish-oil industries. In addition, considerable quantities of oil are derived from salmon waste, grayfish, and anchovies. In 1940, approximately 50 percent of the total oil output, amounting to about 15,200 tons, was from herring. Pilchard-oil production was about 25 percent, and salmon oil, 5 percent. On the Atlantic side of the Dominion, cod is the leading catch, and its output ranks second among all fish caught in Canada.

OTHER WESTERN HEMISPHERE COUNTRIES: Argentina is regarded as the largest fish-oil producer in South America, although its output, when compared with that of the major producing nations, appears insignificant. A river fish, known locally as sabalo, is the principal source of fish oil other than shark-liver oil in Argentina. Other important varieties used for oil are hake, conger, anchovy, and weakfish. The 1942 production of fish oil was estimated at 1,400 short tons, which was more than 5 times the 1939 output. Exports of fish oil are comparatively small.

In Brazil the only fish-oil industry of importance is the production of shark-liver oil used for medicinal purposes. The small amount of fish oil consumed domestically, primarily cod-liver oil, is imported chiefly from Canada and the United States.

The countries along the west coast of South America--Chile, Peru, Ecuador, and Colombia--do not have important fishing industries. Although definite information is not available, their output of fish oil is considered insignificant. However, with the recent establishment of several new fisheries, fish-oil production may soon become more important. In many Caribbean islands, commercial fishing is a comparatively undeveloped industry. Most islands do not have a catch large enough to supply their needs. Little, if any, fish oil is produced.

Europe

NORWAY: Norway, a leading fishing nation of the world, had a prewar 1934-38 average annual catch of over 1 million short tons of fish, of which around 70 percent were herring and brisling and about 20 percent were cod. About 45 percent of the total catch during this period went into the production of oil and meal. The annual fish-oil production, principally from cod liver, and herring, probably averaged around 30,000 tons in 1934-38, in comparison with around 15,000 tons in 1945. Norway is normally a leading exporter of fish oil, although during the war years shipments were reduced to insignificant amounts, which went to Germany. Small amounts of herring and sardine oil, primarily from Iceland and Japan, were imported before the war.

ICELAND: The banks off the coast of Iceland are one of the richest fishing regions of the world. The waters south and southwest of the island furnish cod, and herring comes principally from north of the island. In addition, other important varieties of fish caught in these general areas are haddock, pollock, halibut, and flounders. Prior to the war, it was estimated that the waters around Iceland produced from 17 to 21 percent of the total European output of fish. Britain, Germany, Scotland, and Norway were the most important foreign competitors prior to the war, although at least 11 foreign nations fished in these waters.

The majority of fish caught are processed or canned for sale abroad; only comparatively small amounts go into the fish-oil industry. Herring and cod are the principal source of oil. During the war, the herring-oil output was increased, whereas barreled-herring production fell off because of the higher profits gained from the sale of oil to the United Kingdom. The production of cod-liver oil was maintained at steady levels during the war. The principal purchasers of cod-liver oil in 1945 were the United States, the United Kingdom, Sweden, and France. The output of cod-liver oil during 1945 is estimated at 10,000 tons, and of herring oil, 15,000 tons. During the 1946 season, production of both oils may reach 40,000 tons.

UNITED KINGDOM: Prior to the war, the United Kingdom was the leading producer of cod-liver oil, having an annual production of around 18,000 short tons, or about half the world production. Germany, Norway, Iceland, and Newfoundland were the other important world producers of this oil. At the outbreak of war, a large part of the British fishing fleet was requisitioned by the Government, which resulted in a drastic drop in the cod-fish supply and cod-liver-oil production. Exports of cod-liver oil practically ceased during the war.

The United Kingdom has always been a leading importer of fish oils. During the war, purchases, principally from Iceland, the United States, Canada, and Newfoundland, were maintained at relatively high levels. Prewar imports were derived primarily from Japan and Norway and, to a lesser extent, from Newfoundland and the United States.

GERMANY: Prior to 1940, Germany, a leading producer of cod-liver oil, was surpassed only by the United Kingdom. Of the estimated annual world production in prewar years of around 40,000 short tons of cod-liver oil, Germany is credited with around 10,000 tons. Although herring from the North Sea comprised the greater part of the German fish catch, the oil output, mainly from herring scraps and wastes, was not large enough to fulfill German requirements. Prewar imports of fish oils normally exceeded domestic production.

OTHER EUROPEAN COUNTRIES: In Spain and Portugal, fishing is one of the most important industries. Fish-oil production is small, however, and almost the entire output is consumed domestically. Sardines comprise the largest and most important catch. Both exports and imports of fish oil have been negligible.

In the Netherlands and Belgium, the principal catch is herring. Oil production has always been small. Before the war, both countries depended on outside sources for the bulk of their oil requirements. Nearly all the imported fish oil was edible, and only small amounts were for industrial purposes. The usual practice was to re-export part of the imported oil to other European countries.

In Sweden and Denmark, cod and herring have always been the principal catches, and they increased during the war. The fish-oil industry in both countries, however, remained relatively unimportant. Denmark was one of the leading prewar importers of fish oil in Europe.

The Italian fishing industry expanded rapidly before the war, although high levels of fish-oil production were never reached. During 1935-39 an annual average of around 5,000 tons of sardine oil were produced.

The French output of fish includes mainly cod and herring and some sardines and mackerel. Although information is not available regarding production, most

prewar fish-oil requirements were derived from imports, mainly cod-liver oil from Norway.

Asia

JAPAN: During prewar years, Japan occupied first place among the fishing countries of the world. The annual fishery output in 1936 was around 4 million short tons. Sardines accounted for around 75 percent of the total catch, and herring ranked second in quantity. Other fish were cod, mackerel, salmon, tuna, and bonito. Of all these, tuna and bonito were regarded as the most valuable.

Japan ranked second only to the United States in fish-oil production. Of the total output, which averaged about 85,000 tons in 1935-39, sardines supplied about 80 percent. Almost all the hardened oil used in Japan came from sardines. With the outbreak of war, shortage of labor, lack of fuel, and restrictions in fishing caused fish-oil production to dwindle to approximately 700 tons in 1945.

Japan has always been a leading importer as well as an exporter of fish oils. Prewar exports, almost exclusively of sardine oil, went mainly to Europe, with Germany taking the largest part.

OTHER ASIATIC COUNTRIES: Apart from Japan, only comparatively insignificant quantities of fish oil are produced in Asiatic countries. Korea is the only other exporter of fish oil, mainly sardine oil, which was normally shipped to Japan.

Africa

Portuguese Angola is the most important producer of fish oil in Africa. Her annual production during 1937-39 averaged about 1,100 short tons, and exports amounted to around 900 tons. During the war, the fish-oil output increased.

In the Union of South Africa, fish-oil production, excluding whale oil, is mainly confined to vitamin-liver oils. Before the war, the Union of South Africa was the leading importer of fish oil in Africa, although, on an average, only 300 tons were brought in each year.

Oceania

Little attempt has been made to establish a fish-oil industry in Australia, mainly because the Commonwealth is an extensive producer of animal fats and oils. In addition, Australia is near the tropical Pacific Islands, where vegetable oils were readily available before the war.

Fishing in the South Seas has been important mainly as a source of food to the inhabitants of that region. Bonito and tuna appear to be the most important catch. Little, if any, fish oil is believed to be produced in these islands.

Soviet Union

Although little information is available regarding the Soviet fishing industry, official figures show that fish production increased steadily from 1929 through 1936, reaching nearly 2 million tons in the latter year. The Caspian

Sea and the Far Eastern waters off Siberia supply most of the Soviet fish output. Production and trade figures for fish oil are not available.

World Trade

Approximately half the prewar 1935-39 production of fish oils, estimated at 315,000 tons, entered world trade. Such leading producing nations as Norway, Iceland, and Newfoundland exported a large portion of their output (table 3).

Table 3 - Fish Oils (excluding whale and shark-liver oils): Exports by specified countries, average 1937-39, annual 1940-45

Country	Average 1937-39	1940	1941	1942	1943	1944	1945
	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons
Norway	40.4	17.6	8.0	4.1	2.8	1/	1/
Iceland	28.0	28.0	33.2	32.0	35.4	32.0	24.5
Japan	25.0	4.0	2.0	.4	-	-	-
Canada	2/ 13.8	2/ 7.3	-	-	-	-	20.0
United Kingdom	10.0	2.5	.7	.1	.3	-	-
Newfoundland	3.7	4.0	4.2	3.2	2.6	3/ 4.8	3/ 3.9
United States 4/	1.1	2.1	1.3	4.1	7.1	5.4	10.3
Portuguese Angola	.9	-	-	-	-	-	-
Belgium	.5	-	-	-	-	-	-
Argentina	.3	.3	1/	.2	.3	-	-
France	.2	-	-	-	-	-	-

1/Less than 50 short tons. 2/Excluding liver oils.
3/Year ended October 31. 4/Including fish-liver-oil concentrates, averaging about 25 percent of the total.
Compiled from official and trade sources.

The principal consuming nations were the United Kingdom, Germany, Japan, and the United States, although fish oils were imported to some extent by practically every nation of the world (table 4). During the war, international trade in fish

Table 4 - Fish Oils (excluding whale and shark-liver oils): Imports by specified countries, average 1937-39, annual 1940-45

Country	Average 1937-39	1940	1941	1942	1943	1944	1945
	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons	1,000 sh. tons
Japan	44.0	43.0	30.0	13.8	.2	1/	1/
Germany	45.0	-	-	-	-	-	-
United States	32.9	9.8	12.7	8.3	16.1	2/ 14.7	2/ 15.4
United Kingdom	28.8	53.0	49.6	44.2	34.0	2/ 36.7	2/ 17.8
Norway	16.5	3.9	1/	1/	1/	1/	1/
Denmark	11.6	1.0	-	-	-	-	-
Belgium	8.0	-	-	-	-	-	-
Netherlands	7.0	5.0	-	-	-	-	-
France	4.1	2.0	-	-	-	-	-
Italy	2.0	-	-	-	-	-	-
Canada	1.7	1.6	-	-	-	-	-
Greece	1.7	-	-	-	-	-	-
Yugoslavia	1.0	-	-	-	-	-	-
India	1.0	.7	.4	.3	.1	-	-
Australia and New Zealand	.6	.6	.3	.1	.1	-	-
Spain	.5	-	-	-	-	-	-

1/Less than 50 short tons. 2/Excluding liver oils.
Compiled from official and trade sources.

oils was severely reduced when European and Asiatic supplies were completely cut off from the Western Hemisphere. The main trade channels during this period were between the United States and Canada, the United States and Latin America, Norway and Germany, and Iceland and the United Kingdom.

Hudson River Shad

There were 1,494,000 pounds of shad caught by New York fishermen in the Hudson River in 1946, according to one of the Service's Fishery Marketing Specialists in the Middle Atlantic area. This preliminary total represents a considerable decline from the 1945 catch. The catch was tabulated as follows:

Production of Hudson River Shad by New York Fishermen

Gear	FEMALES		MALES		Total
	Number	Pounds	Number	Pounds	Pounds
	1 9 4 6				
Drift gill nets	93,291	398,638	122,429	336,598	735,236
Stake gill nets	128,580	524,411	74,890	234,133	758,544
Total, 1946	221,871	923,049	197,319	570,731	1,493,780
	1 9 4 5				
Drift gill nets	132,521	570,008	183,986	510,180	1,080,188
Stake gill nets	188,140	762,294	126,872	325,058	1,087,352
Total, 1945	320,661	1,332,302	310,858	835,238	2,167,540

NOTE: These figures may be changed slightly as additional inspection of them is made, but any possible changes will be very slight and should not materially change this comparison.

International Fishing Industry Group Planned

During the Food and Agriculture Organization Conference recently concluded in Copenhagen, it was agreed at an unofficial meeting of representatives from 12 countries represented on the Fisheries Committee that an early study should be made of the practicability of bringing about the organization of an International Federation of Commercial Fisheries, according to the Fisheries Council of Canada Bulletin for October 1946. The group requested Messrs. Klaus Sunnanaa, Secretary General of the Norwegian Fishermen's Association; D. J. van Dijk, Chairman and Director of the Marketing Board of Fishery Products in the Netherlands; and Clive Planta, Secretary-Manager of the Fisheries Council of Canada, to act as a standing Committee. Mr. Planta was designated Secretary to carry on correspondence and to coordinate the information to be provided by members of the Fisheries Committee concerning existing organizations of Commercial Fisheries in all producing countries.

License for the Exportation of Food

The Office of International Trade announced on October 8 the establishment of a consolidated license (CL), effective immediately, for the exportation of all commodities on the Positive List with the processing code "FOOD."

Under this procedure, applicants should submit a single license application for each allocation period covering all proposed exportations to a specific country of each food commodity included in the Positive List. This application, if validated, will constitute a consolidated license for the exportation of the commodity named to the country of destination indicated. However, if more than one license is needed for convenience in export clearance, or if unusual circumstances exist, exporters may submit more than one application during an allocation period for the exportation of the same commodity to a given country. The total amount covered by all applications must not, however, exceed the amount of firm orders on hand when the applications are filed. If additional orders are received for which export authorization is desired during the same allocation period, one or more additional applications may be filed, or licenses already validated may be presented for quantitative amendment.

Additional information regarding the consolidated license (CL) for food may be obtained from the Commodities Branch, Office of International Trade, Department of Commerce, Washington 25, D. C., or from any of the Department of Commerce field offices.

Pacific Coast Operating Costs

From over 200 cost reports from producers and distributors, the Federal Trade Commission has compiled an 82-page publication entitled Cost of Production and Distribution of Fish on the Pacific Coast. This booklet describes halibut, tuna, pilchard, mackerel, shark, otter-trawl, and gill-net fishing, and the distribution of fresh and frozen products. Costs, prices, and profits are covered, as well as marketing organizations and agreements.

This pamphlet is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. for 20 cents per copy.

Salt Fish Exporters Plan Central Office

The International Conference of Salt Fish Exporters, which convened at Bergen, Norway, September 23, at the invitation of Mr. O. Brynjelsen, Director of Fisheries

for Norway, was attended by representatives of exporters from Canada, Denmark, Faroe Islands, France, Newfoundland, Iceland, Great Britain, and Norway, the Fisheries Council of Canada Bulletin (October 1946) reported. Government observers from each of the above countries, and an observer representing the Food and Agriculture Organization also attended the meeting.

The Conference was called for the purpose of resuming discussions held in London in 1939, the recommendations of which did not come to fruition owing to the intervention of war. The objectives set forth in the recommendations made by the London Conference were reviewed, and it was decided to proceed with plans to establish a central office of Salt Fish Exporters at the earliest possible date. The functions of the proposed office, which it was agreed should be located in London, will be to assemble and coordinate statistics covering production, stocks, imports, and exports of salt fish. The office would also assemble and coordinate information generally concerning the industry, and facilitate cooperation between the exporters of the various countries concerned.

Purchases of Fish by Department of Agriculture

August 1946 purchases of fishery products by the U. S. Department of Agriculture totaled $113,003, a decline of $19,259 compared with July. Purchases for the period January 1 to August 31 amounted to $5,028,432.

Purchases of Fishery Products by USDA

Commodity	Unit	August 1946		January-August 1946	
		Quantity	F.O.B. Cost	Quantity	F.O.B. Cost
FISH			Dollars		Dollars
Fish, ground, canned	Cases	-	-	229,000	794,400
Herring, "	"	6,596	40,323	12,688	77,565
Mackerel, "	"	11,189	72,680	48,117	414,760
Pilchards, "	"	-	-	171,207	638,856
Salmon, "	"	-	-	277,034	3,029,414
Sardines, "	"	-	-	15,929	73,437
Total	"	17,785	113,003	753,975	5,028,432

Wholesale and Retail Prices

Wholesale and retail prices for all foods displayed marked increases from mid-June to mid-July, according to reports from the Bureau of Labor Statistics, Department of Labor. Average retail prices of fresh and canned, and fresh and frozen fish rose 7.1 and 8.1 percent, respectively, during the period and showed substantial rises over prices of July 17, 1945. Prices of pink and red salmon advanced 3.6 and 1.6 percent, respectively, from mid-June to mid-July.

Wholesale and Retail Prices

Item	Unit		Percentage change from--	
Wholesale: (1926 = 100)		July 13,1946	June 15, 1946	July 14,1945
All commodities	Index No.	120.7	+ 8.0	+14.3
Foods	do	134.0	+19.9	+26.2
Fish:		July 1946	June 1946	July 1945
Canned salmon, Seattle:				
Pink, No. 1 Tall	$ per doz. cans	2.167	+10.0	+10.0
Red, No. 1, Tall	do	4.063	+ 9.9	+ 9.9
Cod, cured, large shore, Gloucester, Mass.	$ per 100 pounds	13.50	0	0
Herring, pickled, N. Y.	¢ per pound	12.00	0	0
Salmon, Alaska, smoked, N. Y.	do	35.00	0	0
Retail: (1935-39 = 100)		July 16,1946	June 18,1946	July 17,1945
All foods	Index No.	165.7	+13.8	+16.9
Fish:				
Fresh and canned	do	235.2	+ 7.1	+ 8.2
Fresh and frozen	¢ per pound	39.6	+ 8.1	+ 9.2
Canned salmon:				
Pink	¢ per pound can	25.4	+ 3.6	+ 2.9
Red	do	43.8	+ 1.6	+ 9.0

WATER-UTILIZATION PROJECTS often conflict with the maintenance of fishery resources. The larger and more complicated the engineering devices are for utilizing natural water supplies, whether they be for domestic use, industrial processes, irrigation, flood control, navigation, waste disposal, or simple drainage, the greater the likelihood of serious interference with the fish supply. Fish are delicately adjusted to their environment and an entire population of them can be destroyed by small changes in the water involving any of the following: chemical composition, gas content, temperature, volume, rate of flow. Any of these changes may result from deforestation, from improper cultivation of the land, from irrigation, from mining, from drainage of swamps, from "improvement" of waterways, from a host of manufacturing processes, from simple impoundment for controlling floods or for generating electricity. Thus, land utilization and water utilization are closely related. The maintenance of one of the important water resources; i.e., the aquatic life it contains, is frequently overlooked when water-use projects are planned.

--Senate Document No. 51

FOREIGN FISHERY TRADE

Imports and Exports

GROUNDFISH IMPORTS: From January 1 through September 30, 1946, there were 36,401,020 pounds of fresh and frozen groundfish imported into the United States under the tariff classification "Fish, fresh or frozen fillets, steaks, etc., of cod, haddock, hake, cusk, pollock, and rosefish." This was 4,263,917 pounds greater than the groundfish imports for the corresponding period in 1945, according to a report from the Bureau of Customs of the Treasury Department. The reduced tariff quota for the year is 20,380,724 pounds.

Commodity	Sept. 1-30, 1946	Aug. 1-31, 1946	September 1945	Jan. 1-Sept. 30, 1946	Jan. 1-Sept. 30, 1945
Fish, fresh or frozen fillets, steaks, etc., of cod, haddock, hake, cusk, pollock, and rosefish	3,344,057	3,247,613	3,655,290	36,401,020	32,137,103

Canada

COLD-STORAGE: Canadian holdings of fishery products totaled 44,903,000 pounds on October 1, according to a preliminary report received from the Department of Trade and Commerce, Dominion Bureau of Statistics. Compared with stocks held on September 1, this was a decline of 523,000 pounds, but was 6,824,000 pounds greater than October 1, 1945.

* * * * * *

QUEBEC COLD-STORAGE: The Government of the Province of Quebec operates 37 cold-storage plants within the Province, according to information recently received by the Fish and Wildlife Service from the Quebec United Fishermen. Those plants are located as follows:

1 - in Riviere du Loup County
1 - in Matane County
5 - in Gaspe-North County
15 - in Gaspe-South County
8 - in Bonaventure County
5 - on the north shore of the St. Lawrence
2 - in the Magadalen Islands

The first of these plants was built in 1932 and the latest in 1942. The daily freezing capacity of the plants ranges between 1¼ and 10 tons of fish. Storage capacity ranges between 80,000 pounds and 1,000,000 pounds. Until 1943, the Government of Quebec operated these plants as a public service, at no direct charge to the fishermen or packer. However, since 1943, there has been a small storing and freezing charge. Freezing charges vary between ¼ of a cent and 2 cents per pound, according to species of fish.

Honduras

FISHERY DEVELOPMENT: Excellent quality salt-water fish are being retailed for 12½ to 17½ cents per pound in Tegucigalpa, Honduras, the United States Embassy in Honduras reports.

Tegucigalpa, 80 miles inland from the Pacific waters of the Gulf of Fonseca, received only very occasional receipts of fresh salt-water fish prior to 1942. During that year, an enterprising company began shipping fresh fish by airplane from the Gulf to the capital city.

This company arranged to purchase fish from fishermen living at Amapala on Tigre Island, who already were catching small quantities of snappers, groupers, corbina, snook, and other Pacific species. It established its own retail outlet in a converted dwelling in the center of town. From the beginning, this company charged as low prices as possible for its products, selling them within a range that compared with the cheapest meats. The people of Tegucigalpa, who at first knew very little of salt-water fish, responded immediately to the new products. The demand has increased gradually. Early production brought about 5,000 pounds per month to the capital and the receipts have since been raised to 20,000 pounds. It is estimated that twice the present production could now be marketed. The company plans to expand operations further.

Since it was instituted, the production of this company has been enlarged chiefly by expansion of fishing efforts to the coast approaching the capital. Fish caught near San Lorenzo are shipped daily to Tegucigalpa in iced pick-up trucks, while other supplies continue to be flown, iced, twice a week from Amapala. The company anticipates the establishment, in the near future, of a plant for canning tuna and sardines.

Newfoundland

FISHERY OUTLOOK: Copy of an address entitled "The Fisheries--Retrospect and Prospect," delivered before the St. John's Rotary Club by the Chairman of the Newfoundland Fisheries Board on September 12, was received by the U. S. Department of State from the American Consulate General at St. John's, Newfoundland.

Excerpts of the address follow:

When considering Newfoundland and its available fishery resources, it is found that this country is one of the favored of the world, situated as it is at the edge of the world's greatest fishing grounds. The tremendous areas of the fishing banks adjacent to this country contain incredibly huge populations and many vari-

eties of fish. In addition, its unique shore fishery produces large quantities of cod, which, utilized by the filleting and freezing plants, yield a quality product equal to any and inferior to none. Unfortunately, other types of groundfish do not seem to be present in commercial quantities in inshore waters, but are available on the offshore banks.

In matters of production, however, Newfoundland's fisheries are, in relation to the country's possibilities, among the least developed in the world. Other more progressive countries, operating thousands of miles distant, have reaped the harvest of Newfoundland's fishing banks to a far greater extent than it has. Other countries have developed higher standards of cleanliness and care.

Cod-fishing Schooner at Anchor

During the past 4 years, a Marketing Administration Committee, composed of appointees of the Salt Codfish Association and the Fisheries Board, has supervised the marketing of Newfoundland's salt codfish within the international distribution arrangements, under the Combined Food Board. The work of this committee has been a splendid example of the value of intelligent collaboration between government and industry. This committee and the Fisheries Board have spent over a year in the preparation of a Review of Markets and Post-War Planning report, which is probably one of the most comprehensive, analytical, and useful documents ever compiled about Newfoundland's fisheries. It is, for the moment, a confidential report and not for publication. For the past 8 months, a committee on costs of production has been collecting data over the Island in order that an analysis may be made of costs from the producer to the consuming market. Similarly, a most intensive study of the group marketing system, including detailed examination of the operation of such groups in other countries and in other commodities, has been going on for months. The object of this research is to make the country's marketing groups as strong and efficient as may be possible.

From the standpoint of marketing, Newfoundland is in a sounder position today than she has ever been. Because of good organization and future planning, the country has had a number of stable years and has avoided the mistakes which brought many firms to disaster after the first World War. This has brought about the present satisfactory financial condition of Newfoundland's fishery industry.

It is impossible to predict in any detail the events of the next decade; but there is no reason to be pessimistic--they should and can be years of progress and expansion. The world trade in salt codfish is not dying. There are many areas in the world where, for climatic and other reasons, salt codfish will always be in demand, since the combination of high animal protein and salt is well adapted to their needs. The frozen fish industry may suffer from a temporary recession, due to withdrawal of the abnormal wartime demand, but its future, in common with the future of frozen foods generally, should be bright.

Newfoundland's fishery has shown an increase in volume every year for almost a decade. That forward movement should continue. With the concentration of raw material for filleting and freezing, the utilization of fish waste is becoming a possibility. Its application generally to the shore fisheries is a problem which has been receiving attention for several years.

The Food and Agriculture Organization of the United Nations, which is intended to be a permanent body, has recently set up a Division of Fisheries. Newfoundland is not lacking in influence, either in the inclusion of fish as an integral part of the Organization's work, or in the documentation which will guide the Division of Fisheries in its activities. In the next decade there will be more international activity in fisheries than ever before, and it is important that Newfoundland be represented during this period.

To live and prosper, Newfoundland must export more per capita than she has done. This must come largely from the fisheries; not through greater returns from a smaller volume, but by increased production.

Taiwan

FISHING INDUSTRY: Because the inhabitants of Taiwan (Formosa) are a continental rather than an oceanic people, who prefer agricultural pursuits to fishing, there is little prospect for extensive future development of the sea fisheries of Taiwan, the American vice-consul in Tiahoku reported to the State Department on August 20. Fishing in Taiwan is restricted mainly to salt waters, as all lakes, rivers, and ponds in the Province are small and shallow.

The coast line of Taiwan is rather regular, with few indentations to afford breeding grounds for various species of fish and protection for small fishing boats. There are, in some districts, so-called salt-water fish farms for oysters and mackerel. The bulk of the salt-water fishery production, however, is obtained from open sea and bottom fishing in the North China Sea, the Taiwan Channel, and the "vast sea shed extending out through the South China Sea." Tuna fishing is a specialty in the Pacific, South China Sea, the Sulu Sea, the Celebes Sea, and the Banda Channel.

Of the 284,000,000 pounds taken in all marine fishing during 1940, 66 percent was obtained in trawling, tuna fishing, and other operations off the coast; 18 percent was taken in coastal fishing by haul seines and other gear; and 16 percent was produced by "fish culture" or salt-water fish farms (oysters and mackerel). The trawl fishery of Taiwan employed a number of motor fishing craft of 200 to 1,000 metric tons, while tuna fishing was carried on with wooden or steel craft of 50 to 200 metric tons. Also employed were "hand-winding" seines which are drawn along the sea bottom between 2 motor boats. A total of 1,359 motorized craft and 4,468 motorless boats were used in Taiwan fisheries between 1937 and 1943.

Of the total prewar catch, 63 percent was consumed normally within Taiwan, 14 percent was exported, principally to Japan; and 23 percent was used in manufacturing byproducts. About 200,000 cans of tuna were packed.

Fishing equipment, afloat and ashore, suffered heavy war damage during World War II. Only about 10 percent of the fishing industry remained able to produce. Most of the cold-storage and freezing equipment and ice-producing plants escaped damage. Reconstruction has been planned. Handicaps include repair to damaged properties, replacement of experienced men due to withdrawal of Japanese technicians and laborers, and the difficulty of hiring laborers from a population suffering from inflation, heavy increases in taxation, and failures to pay promised wages. Needed materials for rehabilitation include, particularly, heavy oil; manila, wire, and cotton rope for boats and gear lines; seine twine; vessel-building materials; and amonia, calcium chloride, and other items used in refrigeration and storage operations.

Union of Soviet Socialist Republics

FIVE-YEAR PLAN: In a report dated August 19 to the U. S. Department of State the Minister for the Fish Industry of the USSR has given an account of that Republic's 5-year plan for the development of its fishery industries.

The report has been extracted as follows:

The heavy losses sustained by the Soviet fish industry during the war may be estimated by the devastation wrought in fishing areas which used to deliver 40 percent of the country's total catch. These areas require almost complete restoration. This includes fisheries and plants on the Azov and Black Seas. In Murmansk, especially, the fishing fleet suffered so heavily that 38 percent of the netting motor boats and 87 percent of the net-lifting craft have been sunk.

The first task is, therefore, to repair the damages caused by the war. The restoration work will be done on the principle of improvement and modernization.

The 5-year plan provides for a considerable increase in fish production compared with the prewar level. Figures showing the scale of operations planned in the Murmansk trawling base and processing enterprises in 1950 are: at least 25-27 trawling vessels to be unloaded in port daily, 30 vessels to be in the repairing yards, and the Murmansk combined fish-processing enterprise to dispatch two train-loads of produce per day. The trawler base in Murmansk will be enlarged to hold a number of trawlers 2½ times greater than the maximum number in the fleet in 1939.

By 1950, the catch must be 57 percent greater than before the war. The increased output of fish will be mainly achieved by intensified fishing in the sea basins of the North and Far East. In 1950, the number of fishing trawlers in the North will be double the prewar number, and in the Far East, the delivery of fish will be increased 2½ times and will form over one-third of the whole catch of the

USSR. Industrial enterprises will also be built which, in conjunction with the old Japanese area and enterprises, will make the Far East one of the leading fish areas of the Union.

The catch must increase in the old basins. The plan also provides for fish breeding, including sturgeon and salmon, and various meliorative and acclimatizing measures.

During the war, the fishery industry had to reduce its assortment of products and concentrate on the output of special produce. One of the tasks under the new plan is to restore the prewar assortment and quality. In 1950, the output of canned fish should be more than doubled; Murmansk alone should produce, by the end of the 5 years, 2½ times more fishery products than before the war. Various kinds of food fish must be sold in abundance in the delicatessen stores. It is planned that Siberia shall produce a great quantity of tinned fish, which is a specialty of that region. The fishery industry must also find additional methods of processing fish and producing a large quantity of vitamins and endocrine products.

Another important phase of the development is ship building and the manufacture of nets and containers. Each of these is an important industry in itself, and the plan provides measures of development for each separately. The number of fishing craft which must be built is equal to 80 percent of the entire present fleet, and there will be more than double the present scale of ship repairs. In 1950, fishermen must have at least 1,100,000 nets.

Wooden containers will be replaced by cardboard containers, but even then, the amount of special timber required will be very great. Consequently, the fishery industry must increase its timber operations about threefold and prepare timber not only during the fishing season, but all year 'round.

The Murmansk fishing port will be considerably enlarged, and new ship-building yards will be built in the Far East and in other basins. Sea fishing bases will be organized in Koenigsberg, Klaaipeda, and Lipaya, with large fishing vessels, including trawlers. New refrigerating plants, canning factories, net-making factories, and other auxiliary enterprises will be built in various parts of the country, but success will depend on their improvement rather than their increase in number.

In the basins of the North, Far East, and Siberia labor needs are serious. As these sections of the country are sparcely populated, the building of homes must be done on a very large scale.

The number of fishery specialists that will be required in the fishery industries in 1950 is estimated at 1,700, with approximately 7,000 technicians. This is expected to be achieved by enlarging the Moscow and Astrakhan Institutes and by organizing a new fishery institute in the Far East.

It is planned that in 1950, 880 million pounds of frozen and refrigerated fish shall be sold on the market (80 percent more than in 1940) and over 220 million pounds of fresh fish. It will, therefore, be necessary for the Ministry of Railways to increase the number of refrigerator cars and special cars for the transportation of live fish, and for the Ministry of Trade to provide the warehouses and stores with the necessary refrigerating facilities. The Ministry of the Paper Industry is expected to build factories for the manufacture of cardboard packing cases.

FEDERAL LEGISLATION, DECISIONS, ORDERS, ETC.

Department of Agriculture

CANNED SALMON AND PILCHARD: WFO-44 has been used by the Government as a means of obtaining canned fish for delivery to various claimants in fulfillment of allocations and other commitments, the U. S. Department of Agriculture stated on October 30. Procurement of the set-aside quotas has been made by contracts with the Commodity Credit Corporation, an agency of the USDA, with a few exceptions where credit was granted for sales direct to claimants. Contracts have been executed this year by most canners and will remain in force unless cancelled as provided in the contracts.

The USDA has preferred that the various claimants purchase their allocated shares directly from packers or through regular commercial channels. As long as there were maximum sales prices established by the Office of Price Administration, the Department agreed to continue to handle the procurement when so requested by the claimants. Arrangements were made for this service by the British and Belgian Governments and by the U. S. Treasury Procurement Division for several U. S. governmental agencies. Arrangements also were made for credit to be applied for sales and deliveries to certain other agencies and commercial shipments of canned pilchards to the Philippines.

Since the Office of Price Administration has decontrolled canned fish, including canned salmon and canned pilchards, the only two items remaining under the quota provisions of WFO-44, it has been decided that procurement now shall be made direct by each claimant. Deliveries may continue to be made within the provisions of existing contracts between canners and CCC, but negotiations will not be made for new pricing or new contracts, except in emergencies.

In order to fulfill the original purpose of WFO-44 in assuring to each claimant its allocated share of the U. S. production, WFO-44 will remain in full effect. Canners are asked to lend every reasonable assistance to the claimants in obtaining their requirements.

In order that a canner may receive credit against his quota under WFO-44 for deliveries to the claimants listed below, it will be necessary for him to obtain written authorization from Robert W. Tyson, Administrator, WFO-44, Special Commodities Branch, Production and Marketing Administration, U. S. Department of Agriculture, Washington 25, D. C. A written application for this authorization should set forth pertinent details, such as the name of claimant buyer (or country to which shipment will be made); quantity, and identification, such as contract number or export permit number or copy of sales document.

Canned Salmon

United Kingdom (British Government, not including Dominions, Colonies and Protectorates)
Belgian Government (not including Colonies, etc.)
Panama Railroad
U. S. Army
U. S. Veterans' Administration
U. S. Maritime Commission

Canned Pilchards

United Kingdom (British Government, not including Dominions, Colonies and Protectorates)
Panama Railroad
U. S. Veterans' Administration
Philippines

Credit will be granted whether sales and deliveries are to Government agencies or through commercial channels to a claimant on the above list.

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FATS AND OILS: The U. S. Department of Agriculture announced on October 21 that its order WFO-42, restricting the use of fats and oils, was terminated as of that date.

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FISH IMPORT LICENSES: The Department of Agriculture reported on September 27 that it is now prepared to issue licenses under WFO-63, for the importation of Norwegian sardines and Norwegian kippered herring to importers having an historical record of imports and to new importers, including veterans, who do not have historical records of imports.

At present, there is an approved international allocation recommendation under which the United States is to receive 17,370,000 pounds of the 1946-47 Norwegian pack. The allocation consists of approximately 3,200,000 pounds of brisling sardines, 8,610,000 pounds of sild sardines, and 5,560,000 pounds of kippered herring (including kippered snacks). The total allocation is about 55 percent of the average of such United States imports from Norway for the 5 years preceding the war. Under the new regulations, import licenses will be available to both war veterans and non-war veterans, as well as qualified prewar importers.

* * * * * *

FOOD ORDERS REVOKED BY USDA: The U. S. Department of Agriculture announced on October 25 the revocation of 16 War Food orders put into effect during the war to help meet special emergency food problems and requirements.

The action taken by the Department is in line with President Truman's announced policy of accelerated decontrol of prices, and accompanying general relaxation of wartime government regulations and restrictions. The 16 orders covered a broad range of commodities and functions.

The following fishery orders are revoked, effective October 25, 1946:

WFO-52 - Delegation of authority to the Secretary of Interior with respect to fish production and processing.
WFO-58 - Delegation of authority to OPA with respect to rationing of processed foods (not including sugar).
WFO-59 - Delegation of authority to OPA with respect to rationing of fats, oils, and cheese.
WFO-72 - Distribution in the United States of imported fish.
WFO-84 - Policies and regulations governing requisitioning and disposal of food.
WFO-111 - Limitations on refrigerated food storage facilities.

Civilian Production Administration

MANILA ROPE: Manufacturers may now make manila rope for any use in diameters as small as five-eighths of an inch (2 inches in circumference), the Civilian Production Administration said on October 3. Hitherto the size limit permitted by M-84, the cordage order, has been 1¼ inches in diameter, except for a few specified types of manila rope used in fishing, shipping, and oil-well drilling.

This amendment to M-84 is made to permit increased production of manila rope during the fourth quarter, CPA said.

During the last 3 months of the year, it is expected that receipts of manila fiber will be about 27 million pounds, while receipts of sisal will amount to only about 5 million pounds. The supply of sisal will thus be unusually short.

Since much of the sisal supply will be needed for binder and baler twine, CPA is decreasing the sisal allocation for rope to permit production of only 9 million pounds of sisal rope as compared to 18 million in the third quarter. Conversely, the manila quota for rope is being increased to allow production of 24 million pounds of rope as compared to 15 million pounds in the last quarter.

This shift will not affect the total amount of rope which can be made, however, for the fourth quarter quota of 33 million pounds of sisal and manila rope is the same as for the preceding 3 months.

All manila and agave fiber (the over-all term which includes sisal, henequen, cantala, and maguey fibers) imported into the United States is now purchased abroad by the Federal Government and allocated to manufacturers for making cordage products most needed by the national economy. Under Order M-84, processors may use these fibers only in the production of rope, binder and baler twine, and five other kinds of essential twines.

The hard cordage fiber outlook for the rest of the year continues to be very bad. In the case of manila, estimated supplies of 14 million pounds on hand on October 1 are lower than was expected because of shipping difficulties. Reports from the Philippines indicate that a backlog of shipping has accumulated, however, so that an estimated 27 million pounds of manila are expected from the Islands during the quarter. An additional 3.5 million pounds are expected from Central America.

From this supply of 44.5 million pounds will be teken 22,440,000 pounds for the rope quota, 700,000 pounds for the Navy, 2.6 million pounds for export under license from the Office of International Trade, and a small reserve for hardship. An additional 2.5 million pounds will be traded to Canada for 3,750,000 pounds of sisal. Thus at the end of the year, estimated inventory will be only about 16 million pounds.

Provision is made for manila exports through OIT because the United States Government has contracted for the entire exportable supply of manila fiber in the Philippines. The Government recognizes the responsibility for allocating at least a part of this fiber to other countries which normally import it.

The supplies of manila are about half enough to meet the full requirements of the United States economy. Among all the textile products, only cotton broad woven goods are as critically short as the hard cordage fibers.

Office of Price Administration

CANNED HERRING: Retail ceiling price increases of 4 cents a can of Atlantic sea herring and alewives to become effective in the near future, were announced on October 7 by the Office of Price Administration when issuing Amdt. 3 to MPR-396, effective October 12.

New retail ceilings will reflect increases to canners of $1.20 a case of 48 15-ounce cans of Atlantic sea herring and alewives. Wholesalers and retailers will not pass on new ceilings to purchasers until the first shipment carrying new rates is received from their sellers.

This action is being taken, OPA said, as part of the previous action taken on Maine sardines and will restore the price relationship existing between these species and canned Maine sardines. Canners of Maine sardines were granted an increase of $1.20 a case of 100 quarter-pound cans, or 48 three-quarter-pound cans, on August 28.

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CANNED SALMON: Waiver of the usual requirement that processors of canned salmon notify wholesalers and retailers of changes in ceiling prices was announced on October 16 by the Office of Price Administration when issuing Amdt. 37 to MPR-421; Amdt. 80 to MPR-422; Amdt. 76 to MPR-423.

When announcement was made of the August 30, 1946, increases of 12½ percent in processors' ceilings, most of the pack was already put up in wooden containers ready for shipment. Thus, processors would not be able to insert notifications of change in ceilings in the packing cases without undue hardship and delay in getting shipments to distributors. The action, effective October 16, 1946, permits wholesalers and retailers to refigure their ceilings to reflect both the June 28, 1946, and the August 30, 1946, increases in processors' ceilings when they receive first shipments at the new prices after October 16, 1946.

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CANNED SARDINES, OIL, MEAL, AND SCRAP: Increases in retail and canner ceiling prices for canned California sardines and in processor ceilings for Pacific Coast sardine oil, and meal and scrap from all species of fish were announced on October 9 by the Office of Price Administration. The action was taken in Amdt. 1 to MPR-209, effective October 9, and Amdt. 74 to MPR-53 and Amdt. 11 to RPS-73, effective October 7.

Retail ceilings for a 15-ounce can of California sardines are being raised by about 1½ cents.

New processor increases on sardine oil, and fish meal and scrap of all species amount to 1½ cents a pound for the oil and $7 a ton for the meal and scrap, effective as of October 7, 1946.

Wholesale ceilings for canners of Pacific Coast pilchards (which are known as California sardines in the canned state) are being raised by 14 percent, also effective October 9, 1946. Retailers and other distributors will take the new ceilings upon receipt of first shipment at the new rates.

The action is being taken because an OPA cost survey showed that sardine canners and oil reduction plant operators--who also manufacture fish meal and scrap--have been absorbing a 36 percent increase in raw fish costs, in addition to recent labor and material increases.

OPA said increases were granted after consultation with the Department of Agriculture.

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DECONTROLS: The Office of Price Administration, on September 30, announced a detailed list of the food, feed, and other agricultural products which will continue under price ceilings as of October 1, in accordance with the Secretary of Agriculture's monthly certification of agricultural commodities in short supply.

Price controls automatically lapse on any agricultural commodity which is not certified to be in short supply.

Chief changes in the OPA list result from Agriculture's deletion of the following commodities from its short supply certification:

Fresh and frozen salmon
Oat cereals
Canned corn
All domestic canned fruits and juices
Wet and pressed sugar beet pulp
Rum, cordials, liquers and alcoholic specialties

These items were removed from price controls with Agriculture's certification that they were no longer in short supply.

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DECONTROLS: Removal from price control of all foods and beverages except sugar and sugar solutions (including syrup and molasses), corn sugar and corn syrup and rough and milled rice was announced on October 23 by the Office of Price Administration.

At the same time, price controls were lifted from all sales of food and beverages by restaurants and other sellers.

This action, effective October 24, completes the removal of price control on all raw and processed foods, both domestic and imported.

Principal food products affected by the decontrol action are:

Flour	Canned fish	Canned tomatoes	Breakfast cereals
Bread	Candy	Tomato products	Macaroni
Bakery products	Bananas	Canned pineapple	Spaghetti
	Oranges	Pineapple juice	

* * * * * *

FATS AND OILS: All fats and oils, both edible and inedible, were no longer under price control on October 29, 1946, when the Office of Price Administration decontrolled the inedible oils that had been retained under ceiling until then.

The fats and oils decontrolled on October 29 in Amdt. 72 to SO-132, included linseed oil, coconut oil, fish oils, inedible tallow and grease, and a number of lesser known items.

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FISH MEAL AND SCRAP: Removal from price control of all byproduct-feeds and mixed feeds, edible oils and edible oil products, soybeans and flaxseed, effective October 17, 1946, was announced on October 16 by the Office of Price Administration when issuing Amdt. 66 to SO-132.

All byproduct-feeds and mixed feeds for animals, including all fish meal and scrap, have been removed from control because of the end of livestock controls. OPA explained that otherwise sharp livestock price increases, which have followed the lifting of livestock controls, would have caused protein feeds to be fed inefficiently and wastefully because of the favorable feeding ratio that would have existed. Removal of controls on these byproduct-feeds and mixed feeds will permit the proper price relationship and proper feeding to be maintained.

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ICE: Natural and manufactured ice have been removed from price control effective October 29, the Office of Price Administration announced when issuing Amdt. 112 to RSR No. 1, GMPR-154. The decontrol action applies also to icing services, including car icing.

OPA explained that, because of the wide variance in demand for ice, the supply-demand situation had to be considered on a seasonal basis as well as from the standpoint of annual production. The normal surplus of production capacity, which totals about 95 million tons annually, over sales demand on an annual basis is about 60 percent. Moreover, considered on a monthly basis, the supply of ice now exceeds demand, and the excess will continue at least through June 1947.

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SALT FISH: Increases ranging from 2 to 4 cents a pound in retail ceiling prices for salt codfish and salt haddock, hake, cusk, and pollock were announced on October 7 by the Office of Price Administration, when issuing Amdt. 1 to RMPR-384, effective October 12, 1946.

Retail ceilings on salted haddock, hake, cusk, and pollock will go up an average of 2 cents a pound, and retail ceilings on choice and fancy codfish strips will be 3 and 4 cents a pound more. New retail ceilings for a 1-pound wood box of fancy codfish will be about 4 cents higher, when cost of the container is included.

These commodities are processed from fish imported from Canada and Newfoundland.

The announced retail ceilings will reflect increases in processor ceiling prices, to return at least total cost on these items to the industry. The increase in processor ceilings is necessary on account of higher costs resulting mainly from revision of the Canadian exchange rate.

Recent revision of the exchange rate has placed the Canadian dollar on a par with the American dollar. Dollar-and-cent maximum prices set on these salt fish

in May 1943 were revised in September of that year to reflect changes in prices set in Canadian funds by the Combined Food Board for export of these commodities from Canada and Newfoundland. At that time, the difference in exchange rates between Canada and the United States was taken into account.

Retailers and wholesalers will add increases upon receipt of the first shipment from their sellers bearing the increased ceiling prices granted to processors.

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SPERM OIL: Removal from price control of sperm oil was announced on October 24 by the Office of Price Administration, as it issued Amdt. 67 to Supplementary Order 132.

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PRICE RECORDS: All producers, processors, and other distributors of any commodity currently under price controls are required, effective 12:01 a.m., October 24, 1946, to retain for a year after date of decontrol of each commodity, all records, reports, and other documents that they were required to keep or to make, up to the time of decontrol, the Office of Price Administration announced on October 23, when issuing SO-189.

Announcement of decontrol of most foods was made. This action applies to them as well, OPA said.

This action supplements a similar announcement made by OPA on October 15, requiring processors and distributors of livestock, meat, and food and feed products made from them, to retain their records until July 1, 1947.

FISHERY MARKET DEVELOPMENT OFFICES

Location	In Charge	Telephone
Boston 10, Mass. Rm. 710 Appraisers Stores Bldg., 408 Atlantic Ave.	Francis Bandlett, Fishery Marketing Specialist	LIberty 0168
Ketchikan, Alaska, P. O. Box 647.	N. B. Wigutoff, Fishery Economist	540
College Park, Md., P. O. Box 128.	Sarah P. Weems, Home Economist.	WArfield 5800

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RECENT FISHERY PUBLICATIONS

Listed below are informational publications which recently have been processed by the Division of Commercial Fisheries. FL publications are available, free of charge, from the Fish and Wildlife Service, Merchandise Mart, Chicago 54, Ill. Other listed publications may be obtained, also free of charge, from the Division of Commercial Fisheries, Fish and Wildlife Service, Washington 25, D. C.

Number	Title
CFS-287	- Frozen Fish Report, September 1946
CFS-288	- New England Landings, June 1946
CFS-289	- Current Fishery Trade, May 1946
CFS-290	- Fish Meal and Oil, July 1946
CFS-291	- Frozen Fish Report, October 1946
CFS-292	- Vitamin A Report, June 1946
CFS-293	- Vitamin A Report, July 1946
CFS-295	- Fish Meal and Oil, August 1946
CFS-298	- Vitamin A Report, August 1946
FL-120 (Revised)	- Dehydration of Fishery Products
FL-194	- Recipes for Pacific Rockfish
FL-196	- Smoked Herring
FL-197	- Fishery Statistics
FL-199	- New Rig for High Opening Otter Trawl
FL-201	- Studies of the Fecal Streptococci I. The Isolation of Enterococci from Natural Sources

Reprints (Features) from Commercial Fisheries Review, September 1946.

Sep. No. 147 - Feeding Fish Meals to Pullets
Sep. No. 148 - Wrapping Materials for Frozen Fish
Sep. No. 149 - Workmen's Compensation for Seamen

Designations for fishery publications are interpreted as follows:

CFS - Current fishery statistics of the United States and Alaska.

SL - Statistical lists, consisting of lists of dealers of fishery products and manufacturers of byproducts.

FL - Fishery leaflets.

MDL - Market development lists of frozen food locker plants and locker associations.

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Compositors: Jean Zalevsky
Norma C. Dressler

FOOD VALUE OF OYSTERS

OYSTER COCKTAIL

When foods were eaten primarily because of their taste appeal, oysters occupied a foremost rank. Later, when the medical profession showed the way to health by the proper selection of foods for a balanced diet, the oyster not only continued to occupy a foremost rank, but in certain nutritional respects led the procession. This is especially true because of the mineral content of the oyster, which no doubt imparts to it that peculiar tasty flavor. Biochemical studies have shown that oysters contain appreciable quantities of all the minerals needed for the functioning of a healthy body.

It is only natural that the oyster should have such a high content of minerals, including among others, iron, copper, and iodine. It lives and grows in the sea where it is bathed by an environment which is all-sufficient with respect to the growth of living organizms. Here the water is continually augmented by material brought to it by streams from the land, by springs from below the ocean floor, and by volcanic eruptions. This material goes through a huge mixing process by the action of tides, currents, and storms, and finally evolves in a form which is easily assimilated by aquatic forms.

One pint of oysters will supply about one-half of the phosphorus, one-third of the calcium, and all of the iron and iodine required in the food of an average person daily.

--Fishery Circular No. 21

University of Michigan General Library,
Ann Arbor,
1289 Michigan.

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